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CONTRACT NO.: DAMD17-88-Z-8023

TITLE: EFFECT OF FOOD, DIET AND NUTRITION ON MILITARY READINESS

AND PREPAREDNESS OF ARMY PERSONNEL AND DEPENDENTS IN A

PEACETIME ENVIRONMENT

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REPORT DATE: August 15, 1992

TYPE OF REPORT: Annual Report

PREPARED FOR: U.S. ARMY MEDICAL RESEARCH AND DEVELOPMENT COMMAND

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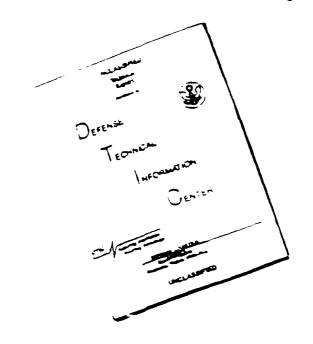
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Four projects conducted at the Pennington Biomedical Research Center (PBRC) are reported herein. A clinical research laboratory is operational and supports U.S. Army Research Institute of Environmental Medicine (USARIEM) field research in sites ranging from Alaska to Bolivia. A stable isotope laboratory supports USARIEM research by determining energy expenditure in the field. The Diet, Neurotransmitters and Behavior research team conducts basic research in the effect of diet on behavior through biochemical, physiologic, and behavioral assessment studies. New studies assessing sleep deprivation and approaches to modifying this stress through dietary manipulation are being initiated. The Menu Modification Project has analyzed and latered two sets of Army menus. The Fort Polk Heart Smart Project, completed in 1991, is described elsewhere.											
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#### **FOREWORD**

Opinions, interpretations, conclusions and recommendations are those of the author and are not necessarily endorsed by the U.S. Army.

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Citations of commercial organizations and trade names in this report do not constitute an official Department of the Army endorsement or approval of the products or services of these organizations.

For the protection of human subjects, the investigator(s) have adhered to policies of applicable Federal Law 45CFR46.

In conducting research utilizing recombinant DNA technology, the investigator(s) adhered to current guidelines promulgated by the National Institutes of Health.

## ANNUAL REPORT US ARMY GRANT July 27, 1991 - July 26, 1992

#### Introduction

In July, 1988, Grant #DAMD17-88-G-8023 was awarded to Pennington Biomedical Research Center (PBRC) for \$3,500,000 for a three-year period to fulfill the following research objectives:

- "Establish a Nutritional Health Promotion Research Development Test and Evaluation (RDTE) Center for military personnel and dependents in a peacetime environment to accomplish the following:
  - a. Assess the nutritional adequacy of the diet of military personnel to promote health and military readiness;
  - b. evaluate and develop military dietary programs for dining facilities, commissaries and other food service facilities operated by the military;
  - c. monitor the nutritional status of military personnel and their family members; and
  - d. develop and evaluate military nutrition, education, and health promotion programs.
- Provide nutrition laboratory research support to the army's military nutrition research program at USARIEM to accomplish the following:
  - a. provide biochemical assessment of nutrition status;
  - b. perform food biochemistry analysis; and
  - c. establish and perform stable isotope methodologies for nutritional assesssment."

Five projects whose scientific design has been approved by the United States Army are listed below.

- 1) Clinical Research Laboratory, Richard Tulley, Ph.D., Laboratory Manager,
- 2) Stable Isotope Laboratory, James DeLany, Ph.D., Laboratory Manager,
- 3) Diet, Neurotransmitters and Behavior, Chandan Prasad, Ph.D., Principal Investigator,

- 4) Cardiovascular Health Promotion for Military Personnel and their Dependents-the Fort Polk Heart Smart Project-Principal Investigators, Gerald S. Berenson, M.D., and David Harsha, Ph.D.,
- 5) US Army Menu Modification Project, Nena Cross, Ph.D., Principal Investigator.

This annual report describes progress during the fourth and final year of the grant. Discussions of individual projects funded under this grant follow. The project described in (4) above, the Fort Polk Heart Smart Project received no funds during teh year of this annual report.

#### I. Clinical Research Laboratory

#### A. Progress on Equipment Acquisition

A second HPLC system with autosampler and diode array and fluorescent detectors (Hewlett Packard 1090M) was received and installed in this past year. This instrument has been in use for retinol analyses and amino acid method development.

In addition, a microwave digestion unit was obtained. A graduate student, Lynelle Hansen, worked on methods of digestion for atomic absorption analyses on this unit.

A computer controlled integration system was acquired late this year. It will be used to control and analyze peaks from the catecholamine HPLC system and the Antek nitrogen analyzer. This system is still in the process of being installed. Successful installation should make it easier to run these instruments and analyze the data from them.

#### B. Progress on Method Development

#### 1. Vitamin C

A new method for vitamin C was developed and automated on the Beckman Synchron CX5. It is a rate method in which ascorbic acid (AA) is oxidized to dehydroascorbic acid (DHAA) by ascorbate oxidase (AO) at pH 6.5. The rate of reaction is monitored by following the change in absorbance of the product of the reaction of DHAA with o-phenylenediamine (OPDA) at 340 nm. Interferences caused by nonspecific reactions with OPDA are eliminated by performing a blank with the reagent for five minutes prior to the addition of the ascorbate oxidase. Linearity is 0-200 mg/L, recoveries are 94% for spiked samples and the coefficient of variation is 6% at a level of 13 mg/L. Studies were carried out to determine the optimized conditions for the assay (see appendix). Optimal conditions include final concentrations of 1.7 mg/L AO, 0.4 g/L OPDA, and a pH of 6.5 in phosphate buffer. This method has

been published as an abstract in Clinical Chemistry (see appendix). Correlation studies were performed comparing this method to the dinitrophenylhydrazine method. These results are also shown in the appendix. Differences in the correlation may be related to the nonspecific nature of DPNH method. The lab procedure for vitamin C is shown in the appendix.

#### 2. Vitamin A

A method for the HPLC analysis of vitamin A (retinol) and retinol palmitate was developed (see 13th Quarterly Report). This method has good precision and recovery. The method can also measure vitamin E. However, this has not been validated for precision and recovery. This will be done when the need arises for this analysis. A sample chromatogram is included in the appendix.

#### 3. 25-Hydroxy Vitamin D

A method for 25-hydroxy vitamin D was set-up using an INCstar kit which uses a tritium labeled 25-hydroxy vitamin D tracer. The method shows good reliability and has been used in two studies to date.

4. Erythrocyte Enzymes with in vitro Activation as Markers of Vitamin Status (Erythrocyte Transketolase with Activation by Thiamine Pyrophosphate/ Erythrocyte Glutathione Reductase with Activation by FAD/Erythrocyte AST with Activation by Pyridoxal Phosphate)

These enzymes were successfully automated on the Beckman CX5 using conditions as determined by Bayoumi for manual analyses (Clin Chem 1976; 22: 327-337). Conditions are given in the appendix.

#### 5. Catecholamines

Plasma and urine catecholamine assays are now being performed by the Clinical Research Laboratory. These methods are in routine use for clinical studies being performed at PBRC. The catecholamines are analyzed using a Bio Rad HPLC system for catecholamines (anion exchange column with electrochemical detection). The sample processing and conditions are those as prescribed by Bio Rad for its system. A sample chromatogram is included in the appendix.

#### C. Progress on Quality Control

Quality Control was performed routinely for all tests being performed by our laboratory. These are tracked using Bio Rad Lyphline quality control software and results are compared to other users across the country monthly. We have done very well on these comparisons.

Interlaboratory surveys (CAP) are routinely performed for general chemistry, hematology, and urinalysis. Results have been very good this past year (see appendix).

#### D. Progress on Army Research Projects

Studies completed this past year include the following:

Sodium Depletion Study: Na, K, Ca, Mg, P, N in sweat, food, feces, urine, and water - 3900 tests (results shown in Quarterly Report 8/14/91).

Survival Study: Chem Panel, Iron, HDL, TIBC, ferritin - 1500 tests.

Ranger 1: chem panel, glycerol, free fatty acids, lactate, HDL, beta hydroxybutyrate, serum vitamin Bl2, folate, 25 hydroxy vitamin D, RBC folate, RBC transketolase with in vitro stimulation by thiamine pyrophosphate, RBC glutathione reductase with in vitro stimulation by FAD, and RBC AST with in vitro stimulation by pyridoxal phosphate - 10,642 tests (results shown in Quarterly Report 1/31/92).

MRE Study: chem panel, glycerol, free fatty acids, lactate, HDL, beta hydroxybutyrate, serum vitamin B12, folate, 25 hydroxy vitamin D, RBC folate, RBC transketolase with in vitro stimulation by thiamine pyrophosphate, RBC glutathione reductase with in vitro stimulation by FAD, and RBC AST with in vitro stimulation by pyridoxal phosphate - 7479 tests.

Ranger 1.5: chem panel, glycerol, free fatty acids, lactate, HDL, beta hydroxybutyrate, serum vitamin B12, folate, 25 hydroxy vitamin D, RBC folate, RbC transketolase with in vitro stimulation by thiamine pyrophosphate, RBC glutathione reductase with in vitro stimulation by FAD, and RBC AST with in vitro stimulation by pyridoxal phosphate - 312 tests (results in Quarterly Report 8/92).

Total Tests run in 1992: 23,833

#### II. Stable Isotope Laboratory

#### A. Overview

The research conducted by the Stable Isotope Laboratory has been in the area of energy and water requirements of soldiers under harsh environmental conditions. The method used to determine energy requirements is the doubly labeled water technique, which involves oral administration of water labeled with <sup>2</sup>H and <sup>18</sup>O. Saliva and urine samples are then obtained for periods of 4-14 days, longer with redosing. Water intake can be determined using only the <sup>2</sup>H labeled water.

The Stable Isotope Lab was involved in several Army research

projects during the current year. One was a water turnover study, part of the Fairchild Air Force Base Survival Study. For this study, urine and saliva samples were analyzed for deuterium to determine total body water at the beginning and end of the study, and for water turnover throughout the study. The analyses for the Fairchild Air Force Base Survival Study have been completed.

Another project completed is the Rangers Training Study, in which energy expenditure and water turnover were measured using doubly labeled water. There were four phases of this study, the Fort Benning phase (7/26/91-8/10/91), the Mountain phase (8/11/91-8/28/91), the Swamp phase in Florida (8/29/91-9/13/91), and a final Desert phase (9/14/91-9/26/91). The analyses for this Ranger Training Study were completed.

A third study completed this year was the Wolf Creek Study, done at the Marine Mountain Warfare Training Center, Bridgeport, California, in which water turnover was studied using <sup>2</sup>H labeled water.

Several new studies are in the planning stages or underway. New Pikes Peak and Ranger Studies and a collaborative study with the Israel Military Services will be carried out in the next year.

#### B. Program on Army Research Projects

#### 1. Fairchild Air Force Base Survival Study

There were 10 soldiers participating in the first iteration and 16 soldiers participating in the second iteration of the Survival Study. The initial and final deuterium enrichments for calculation of isotope dilution space (and total body water), and the deuterium elimination rate for calculation of water turnover were calculated. The results were reported in the 13th Quarterly report, and sent to Tanya Jones for final calculations.

#### 2. Rangers Training Study

There were logistical problems with the Ranger Study due to the high dropout rate. The original (optimistic) plan was to follow 6 soldiers through the entire training program, but only one of the soldiers chosen to receive label completed the program, and 3 soldiers completed three of the four phases. Data were obtained from 6 soldiers during Phases 1 and 3, and from 5 soldiers during Phases 2 and 4. Urine samples from a placebo group were analyzed for deuterium and <sup>18</sup>O, to correct for any changes in isotope abundance of the drinking water of the soldiers due to the changes in location. The detailed data was given in Figures and in the Appendix of the 14th Quarterly Report. The mean change in isotope abundance for Phase 4 (the only phase in which significant changes were observed) were used to correct isotope enrichments for the labeled subjects.

#### Wolf Creek Study

The Wolf Creek Study was carried out at the Marine Mountain Warfare Training Center, Bridgeport, California. Water turnover was studied using <sup>2</sup>H labeled water. Urine and saliva samples from 1/24/92, and 1/31/92, and urine samples from 1/28/92, of 26 soldiers with complete samples were analyzed.

#### 4. Ongoing Projects

Discussions have been carried out with Col. Askew regarding planning for total body water and water turnover measurements for the upcoming Pikes Peak Study.

Discussions have been carried out regarding the collaborative study with the Israel Military Services. A letter has been received from Major Burstein of the IDF Medical Corps, Institute of Military Physiology. Samples from the "Mountain Phase" were collected in February 1992 and have been analyzed by Dr. Andy Coward at the Dunn Nutrition Laboratories, in Cambridge, U.K. The summer study will begin in August, and samples will be shipped to the Pennington Center for analyses of <sup>18</sup>O and <sup>2</sup>H.

Planning for the Ranger 2 Study has been carried out with Dr. Reed Hoyt. The dosing schedule for <sup>18</sup>O and <sup>2</sup>H, and the sampling time points were listed in tables in the 16th Quarterly Report. To obtain estimates of isotope elimination, water turnovers used were similar to those observed during the last Ranger study. The estimated energy expenditures were slightly higher than last years study, since in the present Ranger study, the soldiers will be given more calories and worked even harder than last year.

Energy expenditure during the Ranger Training Study was very high, with an mean of 4350 kcal/d for the days covered by the doubly labeled water periods. Mean energy expenditure was as high as 6045±1537 kcal/d during the "Classes" portion of the Mountain Phase. The isotope enrichments were too low to obtain reliable data for the end of the Fort Benning Phase, particularly the 8/6 to 8/10 portion. Even some of the 8/6 time points were very low, leading to less reliable measures of energy expenditure. It was interesting to note that one soldier who dropped from the study and had barracks/grounds duty had an energy expenditure considerably lower than the mean energy expenditure for the periods. The isotope enrichments for the other Phases was high enough to obtain reliable data. The mean energy expenditures were 4197±1052, 4978±775, 3769±998, and 4328±555 for Phases 1 to 4.

The preliminary water turnover results indicate very high water intakes, particularly during the Fort Benning Phase. This high water turnover led to the low isotope enrichments which caused problems in energy expenditure measurements late in the period. The mean water turnover was  $8.5\pm1.3$ ,  $5.9\pm0.6$ ,  $6.6\pm1.3$  and  $5.1\pm1.7$ 

liters per day for Phases 1 to 4. Surprisingly, the water turnover was lowest during Phase 4, the desert phase.

No conclusions can be drawn for the Survival Study or the Wolf Creek Study, since the final calculations were never sent to PBRC.

#### III. Diet, Neurotransmitters and Behavior

#### A. Introduction

The staff of the Neuroscience Laboratory includes Chandan Prasad, Ph.D., Jeffery W. Brock, Ph.D., Shakeel Farooqui, Ph.D., Anwar Hamdi, M.D., Ph.D., and Masahiro Sakata, M.D. The scientific staff are funded by the Department of the Army Grant DAMD 17-88-Z-8023.

The focus of the neuroscience program is to apply the expertise of the current researh staff to investigate the role of nutrition in behavior. Projects were undertaken which included behavioral, neurophysiological, and molecular neurobiological measurements to study the effects of macronutrient manipulations on higher brain function. Overall, the research has broad application to problems related to aging and development, mental function and dysfunction, as well as to the questions of nutrition science.

#### B. Administrative Items.

- 1. Dr. Hans Rudolph Berthoud is now present at the Pennington Biomedical Research Center as Chief of the Neuroscience Division, which includes Dr. Prasad's team of investigators in the Neuroscience Laboratory.
- 2. The Neuroscience Lab has hired a full-time technician (Research Associate) whose work effort is focused on the collection and analysis of behavioral data in rats.

#### C. Scientific Progress.

1. Project: Duration of auditory memory traces in the rat brain.

event-related potential called "stimulus An negativity" is generated by the brain's automatic response to changes in repetitive auditory input. This response has been previously recorded only in awake humans and in sleeping cats. Investigators have postulated that varying the interstimulus interval during the stimulus mismatch negativity paradigm provides a valid measurement of the duration of auditory, short-term memory traces. Our laboratory has successfully completed the first stimulus mismatch recording of responses (MMRs) urethane/alpha-chloralose anesthetized rats. Data analyses of MMRs in normal adult and aged rats have been completed.

Two groups of male, Sprague-Dawley rats were used in these studies. Groups 1 consisted of rats that were 7 - 11 months old (N = 20) and group 2 consisted of rats that were 18 months old (N = 8). Each animal was anesthetized using alpha-chloralose and urethane (50 mg/kg and 1.5 gm/kg i.p., respectively). The body temperature was maintained at  $37\pm.5$  °C by a heating pad placed under the animal and monitored by rectal probe. A tracheostomy was performed and the animal was permitted to breathe spontaneously. The animal's head was fixed in a stereotaxic frame. Ear bar adaptors were positioned in the indention of the animal's squamosal bones. Earplug speakers were inserted into the left and right auditory meatus and secured in place with surgical tape.

Prior to the recording of MMRs, the functional integrity of the animal's auditory circuit was analyzed by recording brainstem auditory evoked potentials. Platinum wire electrodes were inserted subcutaneously over the skull. A reference electrode was postioned over the top of the skull at the midline. Active electrodes were positioned just behind each ear and lateral to the temporalis muscles. A ground electrode was positioned over the frontal bone. The auditory stimulus consisted of rarifaction clicks, 100 usec in duration, and at a rate of 11.4/sec. The stimulus was delivered binaurally at different intensity levels (35 and 75 dB nHL). Wave IV latencies were recorded and graphed to verify the integrity of the animal's auditory information processing.

For the recording of MMRs, platinum needle electrodes were placed in contact with the dura mater through small holes made in the skull. A reference electrode was located at Lambda. An active electrode was located 4 mm lateral over the right parietal cortex. A ground electrode was placed over the frontal cortex. A standard tone was delivered binaurally to the animal with a frequency of 4 kHz, an intensity of 90 dB nHL, a 1 msec ramp, and a 10 msec The standard tone was delivered with a 95% probability. The deviant tone was a 6 kHz frequency that was delivered with a 5% probability, but was otherwise identical to the standard tone. Electroencephalographic activity in response to the standard tones (950 sweeps) and deviant tones (50 sweeps) were averaged independently. Recordings were made with a bandpass of 0.01 - 30 Hz, and with a 500 msec sweeptime. Separate recordings were made using different interstimulus intervals (ISI): 1, 2, 3, 5, 7, and 10 seconds.

The data were analyzed by integrating the areas under each waveform generated by the standard and deviant tones. Responses to deviant tones were corrected for the mismatch attributable to a difference in sweep-number alone. The magnitude of the remaining Waveform Integral represented the animals' abilities to distinguish the deviant tones from the standard tones. The average Waveform Integrals at each ISI were statistically analyzed by Kruskal-Wallis nonparametric analysis of variance and Mann-Whitney U tests. Statistical significance was accepted at the 90% confidence level.

The normal, adult rats were 7 - 11 months old and weighed 487  $\pm$  10 grams at the time of recording. A plot of Wave IV latencies from the auditory evoked potentials demonstrated a normal audiometric profile in this group of animals, with normal thresholds and recruitment. At each ISI, the distributions of normal, young, adult rats MMRs were skewed and sometimes with bimodal distributions. However, a comparison of mean MMRs with different ISIs (MMR-ISI profile) resembled a bell-shaped curve in which the inclination and declination represent the timecourse for the formation and degradation, respectively, of short-term, auditory memory traces. The magnitude of MMRs were smallest at 1-sec ISI, but gradually increased to a maximum mismatch at 3-sec ISI (p < 0.05, Mann-Whitney test, 3-sec ISI compared to both 1- and 2-sec ISI). At 5-sec ISI, the response magnitude was still robust, but declined to a minimum by 10-sec ISI.

Since MMRs are generated by the auditory association cortex, decreases in MMR magnitude are believed to be due to inaccurate or incomplete feature analysis of the auditory stimuli. Therefore, it has been argued that the declination of the MMR profile curve reflects degradation of auditory memory traces in the brain. In the present study, the animals demonstrated maximum recognition of deviant frequencies when the auditory stimuli were delivered within 3 - 5 seconds of each other. With longer ISI, auditory feature analysis became innaccurate or incomplete. These data suggest that auditory memory traces in the normal anesthetized rat were sustained for as much as 5 seconds before degradation ensued.

The aged rats were 18 months old and weighed 611  $\pm$  7 grams at the time of recording. Audiometric analysis of the aged animals demonstrated profiles of threshold and recruitment that were not different from the young animals. However, the MMR profile of the aged animals was very different from that of their younger cohorts. Although the responses at 1-sec ISI were not different between the two groups, the aged animals showed a dramatic decrease in MMR magnitude at 2-sec ISI (p < 0.05).

The aged animals were obviously less efficient in performing higher order processing of auditory information than the younger animals, perhaps due to more rapid degradation of auditory memory traces. Alternatively, aging may be associated with loss of some early components of frequency analysis that result in incomplete or delayed recognition of differing tones. The observation that MMRs were decreased in the aged animals is consistent with the observations of others that working memory in rats is impaired with age.

These data represent not only the first recording of MMRs from the rat, but the first such recording in any anesthetized animal. Results from the aged animals strengthen the interpretation that MMRs recorded with a variable-ISI paradigm provide a measurement of the duration of short-term memory traces. The recording of MMRs in

anesthetized rats presents an economical model for studying the mechanisms of memory performance. This method may be of interest to a broad spectrum of Neuroscientists who are generally interested in the study of higher brain functions.

 Project: Dietary protein and higher brain function in the rat.

The major objective of this study was to explore possible correlations between cortical cell morphology, cortical electrical activity, and animal behavior, using varying levels of protein in the diet as the primary manipulation. In the first part of this study, we hypothesized that rats consuming a long-term, highprotein diet present with a generalized inability to cope with stress. Male, Spraque-Dawley rats were divided into two groups (N = 7 each), which were fed diets of 50% casein (high-protein or HP group) and 20% casein (normal-protein or NP group). consuming their respective diets ad libitum for 32 weeks, each animal was tested for 5 days (1 trial/day) using the rat swimming test of Porsolt, which measures the animal's emotional adaptation It was observed that by Day 5, the NP group to stress. demonstrated a significantly higher (P<0.05) immobility time than the HP group. These data suggest that the animals on the highprotein diet were less able to develop an effective strategy for coping with repeated stress.

Based upon the results of Part 1 of this study, a second experiment was performed which analyzed the short-term memory formation in the rats maintained on normal- and high-protein diets. This study tested the hypothesis that abnormal behavior in rats that consume a high-protein diet is associated with decrements in higher-order sensory information processing in the brain. In this procedure, each animal was anesthetized using alpha-chloralose and urethane (50 mg/kg and 1.5 gm/kg i.p., respectively). The body temperature was maintained at 37 ± .5 °C by a heating pad placed under the animal and monitored by rectal probe. A tracheostomy was performed and the animal was permitted to breath spontaneously. The animal's head was fixed in a stereotaxic frame. adaptors were positioned in the indention of the animal's squamosal Earplug speakers were inserted into the left and right bones. auditory meatus and secured in place with surgical tape.

Platinum needle electrodes were placed in contact with the dura mater through small holes made in the skull. A reference electrode was located at Lambda. An active electrode was located 4 mm lateral over the right parietal cortex. A ground electrode was placed over the frontal cortex. A standard tone was delivered binaurally to the animal with a frequency of 4 kHz, an intensity of 90 dB nHL, a 1 msec ramp, and a 10 msec plateau. The standard tone was delivered with a 95% probability. The deviant tone was a 6kHz frequency that was delivered with a 5% probability, but was otherwise identical to the standard tone. Recordings were made

with a bandpass of 0.01 - 30 Hz, and with a 500 msec sweeptime. Electroencephalographic activity in response to the standard tones (1000 sweeps) and deviant tones (50 sweeps) were averaged independently. Separate recordings were made using different interstimulus intervals (ISI): 1, 3, and 7 seconds. The data were analyzed by integrating the areas under each waveform generated by the standard and deviant tones. Responses to deviant tones were corrected for the mismatch attributable to a difference in sweepnumber alone. The magnitude of the remaining waveform integral represents the animal's ability to distinguish the deviant tones from the standard tones at the level of the auditory association cortex, and this is called the mismatch response (MMR).

In the normal-protein diet group, the MMRs were largest at 1-The magnitude of MMRs declined at 3- and 7-second ISI, suggesting a degradation of short-term memory traces in a way that resulted in either incomplete or inaccurate feature analysis of the auditory stimuli within that timeframe. In the high-protein diet group, there was a high variability that prevented statistical significance compared to the NP group. However, there was a trend in the data from the HP diet animals that suggested a decrease in the magnitude of their MMRs compared to the control animals. scatter-plot of the data comparing each animal's immobility time in the Porsolt test on Day 5, plotted against the animal's MMR recorded at 1-sec ISI suggests that there may be a correlation between an animal's response to repeated stress and its accuracy in performing analysis of auditory stimuli. Thus, animals maintained on a high-protein diet appear to be different from control animals in their ability to perform higher-order sensory information processing. Impaired development, or increased degradation, of short-term memory traces in the brain may be an important factor relating to the abnormal behavior of animals maintained on a longterm, high-protein diet.

3. Project: Dietary protein and changes in monoamine neurotransmitter levels in the rat brain.

This was the final data collection procedure related to the mission of the Neuroscience Lab sponsored by Dept. of the Army Grant DAMD 17-88-Z-8023. Final analyses of the data on the effects of dietary protein on brain levels of dopamine, DOPAC, and HVA have been completed. The analyses of serotonin, 5-HIAA, norepinephrine, and epinephrine are not yet completed. The following study presents evidence that dopamine levels in the rat brain covaried with the level of protein in the diet.

Proteins and their breakdown products, the amino acids, serve as precursors for amine neurotransmitters in the brain. Studies have shown that both increasing and decreasing dietary protein levels have an effect on higher brain function in animals, although the mechanisms responsible for dietary protein-induced behavior remain unclear. Recent studies have shown that rats maintained on

a chronic, high-protein diet (50% casein) demonstrated increased spontaneous locomotor activity, were more reactive to nociceptive stimuli than rats fed either normal-protein (20% casein) or low-Changes in the cerebral cortical protein (8% casein) diets. activity of rats maintained on 50% casein were indicative of increased central catecholaminergic activity and preparatory Other studies have shown that the 8% casein diet arousal levels. resulted in a decrease in the number of dopamine D2 receptors in the rat striatum. The implication is that central dopaminergic activity may be facilitated or inhibited, respectively, by an increase or decrease in dietary-protein levels. The forebrain dopaminergic systems of the brain have been investigated extensively by neuroanatomists and behavioral pharmacologists, and continue to be of primary interest to clinicians. In the present study, the levels of dopamine and its metabolites were analyzed in the brains of the same animals for which behavioral abnormalities were reported earlier. The brain regions selected for analysis were known postsynaptic tissues for dopaminergic afferent neurons, and they represented neuroanatomically and functionally distinct dopaminergic systems in the brain: the nigrostriatal, mesolimbic, mesocortical, mesohippocampal, periventricular, hypothalamic, and descending dopaminergic systems.

Eighteen male, Sprague-Dawley rats were obtained as weanlings from Harlan Sprague-Dawley (Indianapolis, IN). The animals were divided into 3 groups (N = 6 each) and placed on one of three diets: low-protein (LP, 8% casein) ad libitum, normal-protein (NP, 20% casein) pair-fed with the LP group, and high-protein (HP, 50% casein) pair-fed with the LP group. After the animals had been on their respective diets for 8 months, all were sacrificed by decapitation and their brains were stored at  $-80^{\circ}$ C.

The brains were sliced on a freezing microtome and 27 areas of the brain were collected using the punch-dissection method of Palkovits: amygdala, caudate/putamen, cerebral cortex (frontal, parietal, entrohinal), globus pallidus, hippocampal areas (dentate gyrus, subiculum), hypothalamic nuclei (anterior, lateral, medial pre-optic, posterior, suprachiasmatic nuclei), interpeduncular nucei, medial forebrain bundle, periaqueductal (central) gray area raphe nuclei (doral and medial), substantia nigra, thalamic nuclei (centromedial, inferior colliculi, medial geniculate, posterior, ventrolateral), tuberculum olfactorium, and the ventral tegmental The accuracy of punch location was verified by fixing the tissue sections afterward in 10% formalin, treating them with a Nissl body stain, and comparing the stained sections to Paxinos and Watson's Stereotaxic Atlas of the Rat Brain. The tissue samples were homogenized individually by sonication for 15 seconds in 0.1 M perchloric acid. The homogenates were centrifuged at 15,000 rpm for 15 minutes, then filtered through 0.45 um membranes. pellets were reconstituted in 0.1 N NaOH for the spectrophotometric determination of protein content. Aliquots from the filtered supernatant were analyzed by reverse-phase high-performance liquid chromatography and quantitated by electrochemical detection. The average amine contents for each brain area were statistically analyzed by single-factor analysis of variance, followed by unpaired Student's t-tests. Statistical significance was accepted at the 95% confidence level (alpha = 0.05, two-tailed test).

At the time of sacrifice, the body weights of the animals were not significantly different between the 3 diet groups (Mean  $\pm$ S.E.M.): LP group, 507  $\pm$  14; NP group, 472  $\pm$  11; HP group, 475  $\pm$  16 The effects of the dietary protein manipulations on the contents of DA, DOPAC, and HVA in the 27 different nuclei were catagorized in terms of the dopaminergic system in the brain which Dopamine levels in the substantia nigra and they represent. caudate/putamen (which constitute most of the mesolimbic system) were significantly decreased by feeding the LP diet. Increasing dietary protein also increased dopamine content of the caudate/ putamen. Dopamine levels in the ventral tegmental area and frontal cortex (which constitute the mesocortical system) were not affected by protein levels in the diet. Diminished dopamine levels observed in the medial forebrain bundle with the LP diet probably reflect the changes seen in the mesolimbic system. Monoamine oxidase activity (metabolism of DA to DOPAC) was sensitive to changes in dietary protein only in the caudate/putamen and the medial forebrain bundle, where DOPAC content was diminished by the LP diet. The activity of catechol-O-methyltransferase (metabolism of DA to HVA) was sensitive to changes in dietary protein only in the substantia nigra and frontal cortex, where HVA content diminished with the LP diet. HP diet also resulted in a decrease in HVA levels in the frontal cortex.

The values obtained from neurochemical analysis of the NP to those published by other control group were similar investigators who have examined the levels of DA, DOPAC, and HVA in the rat brain. One important aspect of this comprehensive mapping of the distribution of changes in DA levels in the brain is that the data may be interpreted from a behavioral science perspective. Heterogeneity in the distribution of DA in the brain allows for the differences in DA levels in response to manipulation to be related to the functional specialization of those brain areas. Viewing the data in this way makes it is possible to gain further insight into the physiological mechanisms that link dietary macronutrients and behavior. The distribution of changes in DA metabolism induced by the different diets suggests that specific dopaminergic systems are activated by the manipulation of dietary protein. These data demonstrate that the level of DA and its metabolites changed following dietary protein manipulation in a region-specific manner. The nigrostriatal and mesohippocampal systems were the most in dietary protein, compared to sensitive to changes mesocortical, mesolimbic, periventricular, and descending DA systems of the brain. The incerto-hypothalamic system was remarkably insensitive to dietary protein. When changes in DA levels were apparent, DA content generally covaried with the level

- of protein in the diet. In conclusion, differential modulation of dopaminergic activity in discrete regions of the brain may be a mechanism by which dietary protein influences the expression of locomotor behavior in rats.
  - D. Manuscripts published/in press, Neuroscience Lab, 1991-92
- 1. Chandan Prasad, Charles W. Hilton, F. Svec, Emmanual S. Onaivi, and P. Vo. Could dietary proteins serve as cyclo(His-Pro) precursors? Neuropeptides 19:17-22, 1991.
- 2. Emmanual S. Onaivi, Stephanie Talton, and Chandan Prasad. The level of protein in diet modulates the behavioral effects of amphetamine. In: Endocrine and Nutritional Control of Basic Biological Functions. H. Lehnert, R. Murison, H. Weiner, D. Hellhammer, and J. Boyer (Eds), 1991.
- 3. Shakeel M. Farooqui, Jeffery W. Brock, Anwar Hamdi, and Chandan Prasad. Antibodies against synthetic peptides predicted from the nucleotide sequence of D<sub>2</sub> receptor recognize native dopamine receptor protein in rat striatum. <u>Journal of Neurochemistry</u> 57:1363-1369, 1991.
- 4. Jeffery W. Brock and Chandan Prasad. Motor, but not sensory, cortical potentials are amplified by high-protein diet. <u>Physiology and Behavior</u> 50:887-893, 1991.
- 5. Anwar Hamdi and Chandan Prasad. Attenuation of pulsatile changes in the density of striatal [3H]GBR-12935 binding sites during chronic ethanol consumption. Brain Research 567:71-75, 1991.
- 6. Chandan Prasad, Anwar Hamdi, Jeffery W. Brock, and Charles W. Hilton. Cyclo(His-Pro) and food intake. In: The Science of Food Regulation. George Bray, Ed., Louisiana State University Press, Baton Rouge, Lousiana, 1992.
- 7. Jeffery W. Brock, Shakeel Farooqui, Keith Ross, and Chandan Prasad. Localization of dopamine  $D_2$  receptor protein in the rat brain using polyclonal antibody. in press, <u>Brain Research</u>, 1992.
- 8. Anwar Hamdi, Emmanuel S. Onaivi, and Chandan Prasad. A low protein-high carbohydrate diet decreases D2 dopamine receptor density in rat brain. <u>Life Sciences</u> 50:1529-1534, 1992.
- 9. Anwar Hamdi and Chandan Prasad. Bidirectional changes in striatal D2-dopamine receptor density during chronic ethanol intake. Alcohol 9:133-137, 1992.
- 10. Shakeel M. Farooqui, Chandan Prasad, and Massarat Ali. Production and characterization of a monoclonal antibody to dopamine D2 receptor: comparison with a polyclonal antibody to a

- different epitope. <u>Biochemical and Biophysical Research</u>
  <u>Communications</u> 184(2):661-667, 1992.
- 11. Masahiro Sakata and Chandan Prasad. Transient decrease in rat striatal D2 dopamine receptor mRNA level after acute haloperidol treatment. in press, Molecular Brain Research, 1992.
- 12. Masahiro Sakata, Shakeel M. Farooqui, and Chandan Prasad. Post-translational regulation of loss of rat striatal D2 dopamine receptor during aging. in press, <u>Brain Research</u>, 1992.
- 13. Emmanuel S. Onaivi, Jeffery W. Brock, and Chandan Prasad. Dietary protein levels alter rat behavior. in press, <u>Nutrition</u> Research, 1992.
- 14. Jeffery W. Brock and Chandan Prasad. Alterations in dendritic spine density in the rat brain associated with protein malnutrition. in press, <u>Developmental Brain Research</u>, 1992.
- 15. Shakeel M. Farooqui and Chandan Prasad. An antibody to dopamine D2 receptor inhibits dopamine antagonist and agonist binding to dopamine D2 receptor cDNA transfected mouse fibroblast cells. in press, <u>Life Sciences</u>, 1992.
- 16. Anwar Hamdi, Johnny Porter, and Chandan Prasad. Obesity and hyperphagia do not accelerate age-associated loss of striatal D<sub>2</sub> dopamine receptors. accepted to <u>Brain Research</u>, 1992.

#### E. Manuscripts in preparation

- 1. Jeffery W. Brock, Keith Ross, Ashley Cowart, and Chandan Prasad. Stimulus mismatch negativity in the anesthetized rat: normative data and the effects of aging. (in preparation for Electroencephalography and Clinical Neurophysiology).
- 2. Jeffery W. Brock, Keith Ross, and Chandan Prasad. REM sleep deprivation and caloric intake in the rat. (in preparation for Physiology and Behavior).
- 3. Shakeel Farooqui, Jeffery W. Brock, Joseph LaFleur, and Chandan Prasad. Protein malnutrition increases expression of MAP2 proteins in the rat brain. (in preparation for <u>Neuroscience Letters</u>).
- 4. Shakeel Farooqui, Joseph LaFleur, and Chandan Prasad. Coupling of GTP-binding protein to dopamine D<sub>2</sub> receptor: presence of an epitope on the 110 kDa D<sub>2</sub> receptor complex recognized by antibody to amino terminal peptide of the Gi-beta. (in preparation for <u>Journal of Neurochemistry</u>).
- 5. Jeffery W. Brock, Shakeel Farooqui, Emmanuel Onaivi, and Chandan Prasad. Modulation of serotonin levels in discrete areas of the rat brain by altering dietary protein:carbohydrate ratio.

(in preparation for <u>Journal of Neurochemistry</u>).

- 6. Shakeel Farooqui, Jeffery W. Brock, Emmanuel Onaivi, and Chandan Prasad. Dietary protein:carbohydrate ratio modulates central catecholamine levels in discrete areas of the rat brain. (in preparation for <u>Journal of Neurochemistry</u>).
- 7. Cherng-Zee Chuang, Francis Avery Ragan, and Chandan Prasad. Demonstration of anthranilic acid in rat brain. (in preparation for <u>Journal of Neurochemistry</u>).
- 8. Cherng-Zee Chuang, Francis Avery Ragan, and Chandan Prasad. Steady-state level of tryptophan metabolites in rat brain. (in preparation for <u>Brain Research</u>).
- 9. Emmanuel Onaivi, Stephanie Talton, and Chandan Prasad. Dietary modulation of drug action; neuroleptics and delta-9THC. (in preparation for <u>Brain Research</u>).
- 10. Emmanuel Onaivi, Shorye Payne, Jeffery W. Brock, Shakeel Farooqui, and Chandan Prasad. Nicotine and age-associated decrease in the tail-flick latency. (in preparation for <u>Pharmacology Biochemistry and Behavior</u>).
- 11. Emmanuel S. Onaivi, Shorye Payne, Jeffery W. Brock, Anwar Hamdi, Shakeel Farooqui, and Chandan Prasad. Strain differences in the effects of dietary protein on avoidance behavior in the rat. (in preparation for <u>Physiology and Behavior</u>).
- 12. Jeffery W. Brock, Keith Ross, and Chandan Prasad. Maladaptive coping patterns in the rat induced by high dietary protein:carbohydrate ratio. (in preparation for <u>Physiology and Behavior</u>).
- 13. Shakeel Farooqui, Anwar Hamdi, and Chandan Prasad. Chronic ethanol ingestion differentially regulates the activity of Gia and Go in rat striatum. (in preparation for <a href="mailto:Brain Research">Brain Research</a>).
- 14. Jeffery W. Brock, Richard Tulley, Kerrie Munson, Keith Ross, and Chandan Prasad. Protein malnutrition and amino acid profiles in the rat brain. (in preparation for <u>Neurochemical Research</u>).

#### F. Abstracts

- 1. Shakeel M. Farooqui, Anwar Hamdi, Jeffery W. Brock, and Chandan Prasad. Production and characterization of antibodies to dopamine D<sub>2</sub> receptor using an undecapeptide corresponding to the NH<sub>2</sub> terminal sequence. American Federation of Clinical Research, Southern Meeting, Endocrinology Section, 1991.
- 2. Sheila Venugopal, Shakeel M. Farooqui, Jeffery W. Brock, and Chandan Prasad. Protein kinase C induced release of dopamine is

- independent of G-protein uncoupling. American Federation of Clinical Research, Southern Meeting, Metabolism Section, 1991.
- 3. Anwar Hamdi, Emmanuel S. Onaivi, Shakeel Farooqui, and Chandan Prasad. Level of protein in diet modulates dopamine receptor. FASEB abstracts, 1991.
- 4. Emmanuel S. Onaivi, Shorye Payne, Jeffery W. Brock, and Chandan Prasad. Nicotine and age-associated decrease in the tail-flick latency. 53rd Annual meeting of the <u>Committee on Problems of Drug Dependency</u>, 1991.
- 5. Jeffery W. Brock and Chandan Prasad. Motor, but not sensory, cortical potentials are amplified by high-protein diet. <u>Third IBRO World Congress of Neuroscience</u>, 1991.
- 6. Emmanuel S. Onaivi, Shorye Payne, Jeffery W. Brock, Anwar Hamdi, Shakeel Farooqui, and Chandan Prasad. The performance of Sprague-Dawley and Hooded rats in the shuttle-box avoidance paradigm is dependent on the level of protein in diet. Third IBRO World Congress of Neuroscience, 1991.
- 7. Masarat Ali, Jeffery W. Brock, C. Douglas Gulley, Melanie Lavergne, and Wayne V. Vedekis. Regional distribution of retinoic acid receptor alpha (RAR-alpha), -beta, and -gamma forms in rat brain. Third IBRO World Congress of Neuroscience, 1991.
- 8. Jeffery W. Brock, Shakeel Farooqui, Keith Ross, and Chandan Prasad. Localization of dopamine D, receptor protein in rat brain using polyclonal antibody. <u>Society For Neuroscience Abstracts</u> 17(1):415, 1991.
- 9. Masahiro Sakata, Shakeel Farooqui, and Chandan Prasad. Age dependent changes in dopamine D<sub>2</sub> receptor mRNA levels in anterior pituitary glands of Fisher 344 rats. The Endocrine Society
- 10. Massarat Ali, Jeffery W. Brock, C. Douglas Gulley, and Wayne V. Vedeckis. Age-related changes in regional distribution of retinoic acid receptor (RAR-beta) in rat brain. <u>American Society for Cell Biology</u>, 1991.
- 11. Jeffery W. Brock and Chandan Prasad. Alterations in dendritic spine density in the rat associated with protein malnutrition.

  American Federation for Clinical Research, Southern Meeting, 1992.
- 12. Jeffery W. Brock, Keith Ross, and Chandan Prasad. Maladaptive coping patterns in the rat induced by high dietary protein:carbohydrate ratio. <u>Journal of Cellular Biochemistry</u> suppl. 16B:261, 1992.
- 13. Shakeel M. Farooqui, Jeffery W. Brock, Joseph W. Lafleur, and Chandan Prasad. Region specific modulation of rat brain dopamine

levels by long term changes in the dietary protein. <u>Journal of Cellular Biochemistry</u> suppl. 16B:264, 1992.

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- 15. Shakeel M. Farooqui, Chandan Prasad, and Massarat Ali. Production and characterization of a monoclonal antibody to dopamine D2 receptor. The Endocrine Society, 1992.
- 16. Jeffery W. Brock, Shakeel Farooqui, Emmanuel S. Onaivi, Anwar Hamdi, and Chandan Prasad. Dietary protein modulates dopamine levels in the rat brain. submitted to <u>Society for Neuroscience</u>, 1992 meeting.
- 17. Shakeel Farooqui and Chandan Prasad. Retinoic acid mediated induction of dopamine D2 receptor in human SHSY-5Y neuroblastoma cells. submitted to <u>Society for Neuroscience</u>, 1992 meeting.
- 18. Amwar Hamdi, Jeffery W. Brock, Keith Ross, Shorye Payne, and Chandan Prasad. REM sleep deprivation and dopamine receptor binding in rat striatum. submitted to <u>Society for Neuroscience</u>, 1992 meeting.

#### IV. Fort Polk Study

#### Introduction

The past decade has seen increased interest in nutritional and overall health status issues in Americans. As more data become available for the nation as a whole, it is natural to explore various sub-populations with an eye for contrasts relative to the whole. To this end both sexes and many ethnic and racial groups have received considerable attention.

Another sub-population approach is to investigate health issues among different occupational groups. One of the largest is, of course, the U.S. military. During the late 1980's the U.S. Congress mandated the Army to conduct research into a variety of nutritional, health, and wellness behavior topics in both soldiers and their families. In 1988 the Fort Polk Heart Smart Project was instituted specifically to gather data on military families. Three sub-studies with interlocking goals were developed. These were:

Project 1. Nutritional and Physical Activity Assessment of
Military Wives;

<u>Project 2</u>. Cardiovascular Disease Risk Factor Status of Military Families; and

Project 3. Health Promotion in Military Families.

The goals of these studies were:

- 1. To investigate eating patterns in military dependents'
- 2. To characterize health influencing behaviors (exercise, smoking, alcohol consumption) in the same population;
- 3. To determine typical levels of traditional cardiovascular (CV) risk factors in the same population; and
- 4. To develop a CV health promotion model addressing issues of eating, exercise, and general lifestyle in the same population.

From August 1989 through July 1991, studies were implemented at Fort Polk, Louisiana, 15,000 military personnel. Data collection ended on July 25, 1991. The results were evaluated in a preliminary fashion and that evaluation was summarized in the 1991 Annual Report.

In that report, the following conclusions were made:

The process of data collection at Fort Polk has provided a wealth of information for project staff. Aside from a massive amount of CVD risk factor and lifestyle data which will take months to digest, a number of general conclusions have formed.

- 1. Families in the military largely mirror society in general. Although specific contrasts occur (greater dependence on fast food, more alcohol consumption, increased levels of physical activity) in the bulk of characteristics, Fort Polk Denizens were quite like other Americans.
- 2. This means, overall, that military families eat too much fat and sodium, are somewhat overweight, smoke too much, and suffer from a number of pervasive stresses. They exhibit unhealthy lipid profiles more often than is acceptable and they consume alcohol at high rates.
- 3. In this regard they are prime candidates for health promotion.
- 4. The military provides excellent resources for the delivery of health promotion programs.
- 5. A multi-focal health promotion is feasible and well accepted by military families.

Our efforts at Fort Polk prove that such programs are needed and possible. A model for delivery is now available for further implementation in a variety of military settings. In the Appendix are copies of correspondence from Colonel E. Wayne Askew requesting a report from the project leader, Dr. Gerald Berenson, as well as copies of correspondence from the PI to Dr. Berenson indicating that the final report for the Heart Smart Project would be submitted separately from the other projects.

#### V. Menu Modification Study

#### A. Introduction and Background

Since 1985, nutrition initiatives have been introduced into the Armed Forces Recipe Service, the Army Master Menu and the Army Food Service Program to provide soldiers with diets lower in sodium, fat, and cholesterol. The Military Nutrition Division of the United States Army Research Institute of Environmental Medicine (USARIEM) has conducted assessments of soldiers' nutrient intakes. These studies resulted in the following nutrition related recommendations: continue revision of the Armed Forces Recipe File to reduce sodium in recipes, continue to decrease the percentage of calories obtained from fat to 35% or less of total calories, and provide soldiers low cholesterol, low fat alternatives to eggs, and evaluate the acceptability and impact of using this approach to moderate soldiers' cholesterol intakes.

The Menu Modification Project incorporates modification of two weeks of Army garrison menus to meet the nutrition targets specified by the Army. The purpose of the Menu Modification Project is to provide healthful, nutritious menu selections which moderate soldier's sodium, fat, and cholesterol intakes.

#### B. Progress

Initially during this period, a week of Army menus was analyzed using the Extended Table of Nutrient Values for comparative purposes. The menus analyzed and results of the analysis were included in the Quarterly Report of August 1, 1991-October 31, 1991. These data were presented to Army officials and the Committee on Military Nutrition during their September 18-20, 1991 visit to the Pennington Center. In addition, Dr. Catherine Champagne presented the attached data (see Appendix, Quarterly Report 8/1/91-10/31/91) in an Army briefing on Monday, September 23, 1991.

From November 1, 1991-January 31, 1992, breakfast menu items were prepared in batches of 25 in the LSU student cafeteria. The LSU Food Service was unable to prepare the breakfast menu items in batches of 100 so the plan was for this to be completed in the Pennington Biomedical Research Center Quantity Preparation kitchen the following quarter. Quantity preparation of other menu items continued in the student cafeteria on the Louisiana State University campus. The recipes prepared included Italian Meat Sandwich, Italian Vegetable Bake, Beef and Spinach Pita Sandwiches,

Chicken and Spinach Salad.

Twenty-five completed recipes were submitted to the Army for review. Nutritional analysis of recipes was carried out using the Extended Table of Nutrient Values (ETNV).

Data from the 1991 studies were presented at the 89th Annual Meeting of the Southern Association of Agricultural Scientists, Food Science and Human Nutrition Section, February 2-5, 1992, in Lexington, Kentucky. The title of the presentation was "Nutritional Analysis of Seven Days of Modified vs. Regular Army Menus Using the Extended Table of Nutrient Values (ETNV)." The abstract is included in the appendix of the Quarterly Report of February 1-April 30, 1992.

Drs. Ryan and Champagne attended the Research and Development Associates for Military Food and Packaging Systems, Inc.'s (R & DA) 46th Annual Spring Meeting and Exposition held March 23-25, 1992 in Arlington, Virginia. Further details of the meeting are included in the Quarterly Report of February 1-April 30, 1992.

During the February 1, 1992 - April 30, 1992 quarter, initial plans were formulated for changes to the menu modification project. The main focus of the project was in the area of implementation of the project at an actual U.S. garrison such as the facility at Fort Polk, Louisiana.

On May 5, 1992 a culinary research associate, Kevin Gilley, was hired.

Catherine Champagne and Kevin Gilley, accompanied by MAJ Cecilia Thomas, visited the Ft. Polk Installation on June 1, 1992 for purposes of future implementation of the project at that facility. A copy of the trip report can be found in the Quarterly Report of May 1-July 27, 1992.

On June 3, 1992, the Committee on Military Nutrition Research was briefed on the plans for the new Menu Modification Project for 1992-93. A handout was presented to the Committee reviewing the past progress of this research and outlining future plans (for complete report refer to Quarterly Report of May 1-July 27, 1992).

The goals include keeping kilocalorie content of menus similar to current menus while reducing fat content, reducing fat content of menus to 30% of kilocalorie content in keeping with the Army's proposed updated nutrition standards, reducing cholesterol content of menus to no more than 300 mg/day, and emphasizing efforts to reduce sodium content of recipes/menus, which has been the most difficult task during previous work.

Committee members made several suggestions on methodology for doing garrison dining facility studies using the newly developed

#### recipes/menus:

- 1) Consider intermingling new menu days into alleady existing menu when the study is done rather than study one full week of existing menu then immediately studying a full week of totally new menus (novelty of new menus will confound results).
- 2) Running the new menus several times in menu cycle then doing study (again to reduce the novelty impact of new menus)
- 3) Doing periodic acceptance tests of recipes at Ft. Polk or have Ft. Polk personnel periodically come to PBRC to test acceptance of recipes.

Catherine Champagne and Kevin Gilley traveled to Ft. Lee, Va and Natick, Ma to meet with Army recipe developers and menu planners and tour the Quartermster School (ACES). A trip report for these visits is contained in the Quarterly Report of May 1-July 27, 1992.

The main focus of the newly redesigned Menu Modification Project is implementation of the project at an actual U.S. garrison such as the facility at Fort Polk, Louisiana. Kevin Gilley will develop ethnic dishes, breakfast dishes, and other main and side dishes to be potentially incorporated into the Army Master Menu. The need for more ethnic recipes and menus was reemphasized at the Ft. Lee and Natick visits. A benchtop panel of 20 persons with food experience will be utilized to provide guidance in acceptability testing. Overall acceptability testing will consist of a larger panel of 36 members. The nine-point hedonic scale currently used by the military would be the instrument used to test product acceptability.

Once the study is outlined for implementation at Ft. Polk, acceptability will be conducted through a cooperative arrangement with Louisiana Tech University in view of their closer proximity to the facility as compared to Pennington. Graduate students from Louisiana Tech will develop ancillary studies for individual research projects. Catherine Champagne will continue nutritional analysis of modified menus using the Extended Table of Nutrient Values to present data to Army officials and at professional scientific meetings.

#### C. Conclusions

From previous research and planned future directions for the project, the Menu Modification Project will enable the military to enhance the Armed Forces Recipe File with versatile, healthy, and innovative new items. The focus on developing recipes meeting breakfast needs, as well as including ethnic dishes, addresses

needs expressed by administrators both at the Quartermaster School and Center and at Natick.

#### APPENDIX

PENNINGTON BIOMEDICAL RESEARCH CENTER LOUISIANA STATE UNIVERSITY

Interoffice Correspondence

From:

Donna Ryan

Date:

June 25, 1992

To:

Jim DeLany
Richard Tulley
Cathy Champagne
Nena Cross
Hans Berthoud
Chandan Prasad
Jeff Brock
Gerald Berenson
David Harsha

Re: Quarterly, Annual, and Final Report for U.S. Army Grant

The time is approaching for completion of paperwork for our U.S. Army Grant. To remind you, the grant was extended to a final date of July 27, 1992. While funding will continue for our U.S. Army research, it will be under a new grant and we are required to close out and complete the obligations of this contract in terms of paperwork. Listed below are the reports that are required and the date that they are due.

Quarterly Report for the period May 1 - July 27, 1992 - Due to Donna Ryan August 7, 1992

Annual Report for the period July 28, 1991 - July 27, 1992 - Due August 14, 1992

Final Report for the period July 28, 1988 - July 27, 1992 - Due August 28, 1992

For the Fort Polk Heart Smart Project we are only submitting documentation of publications for the quarterly and annual reports. Please continue to send this information to me. For the final report, we should revise the document that was submitted in August 1992 and erroneously termed the "Final Report." This document should be revised to reflect the final analysis of data, publications that have occurred to date, and publications that are planned from the data.

For the other projects on the grant the report submitted in August 1991 can be modified to reflect an additional year's work.

You may request a copy of your section of the August 1991 report if you need it from Janice Walker. We will follow the same format used for the reports that we have prepared in the past. This format should be familiar to everyone. If you have questions, please call me.

#### Page 2

Please mark your calendars now for the above noted important deadlines. Please observe the deadlines that I have listed. I have only allowed a few days from the deadline for me to prepare the final document for distribution to the Army.

jgw

PENNINGTON BIOMEDICAL RESEARCH CENTER LOUISIANA STATE UNIVERSITY

Interoffice Correspondence

From:

Donna Ryan

Date:

June 25, 1992

To:

Jim DeLany
Richard Tulley
Cathy Champagne
Nena Cross
Hans Berthoud
Chandan Prasad
Jeff Brock
Gerald Berenson

David Harsha

Re: Final Report for U.S. Army Grant

Attached you will find a copy of my June 25, 1992 memorandum to you concerning the U.S. Army reports. Please change the date of the Final Report to the due on <u>August 21, 1992</u>, instead of August 28, 1992. I must have it in to the Army by August 27, 1992. Thank you for your cooperation.

jgw



## DEPARTMENT OF THE ARMY US ARMY RESEARCH INSTITUTE OF ENVIRONMENTAL MEDICINE NATICK, MASSACHUSETTS 01760-5007

July 20, 1992

Military Nutrition Division

Donna H. Ryan, M.D. Pennington Biomedical Research Center 6400 Perkins Road Baton Rouge, Louisiana 70808

Dear Dr. Ryan:

Pursuant to our discussion of the completion of work on grant #DAMD 17-88-Z-8023, I would like to request a final report on the Fort Polk Heart Smart project. At the time of the on-site review, September 19, 1991, Dr. Berenson had not finished analyzing and summarizing all of his data from the final phase of the project.

Since this project was one of the more extensive efforts of this grant and is of considerable importance to the Army, we would like to have a report detailing goals, methods, results, and recommendations. While this information may be eventually published in several journal articles, it would be very useful to us to have a single integrated report of the total project.

Thank you for your assistance.

Sincerely,

Eldon W. Askew, Ph.D. Colonel, U.S. Army

Grant Officer Representative

Copy Furnished:

Colonel Schnakenberg, Director, Army Systems Hazards, U.S. Army Medical Research and Development Command



## Pennington Biomedical Research Center

LOUISIANA STATE UNIVERSITY

July 28, 1992



Colonel Askew, Ph.D.
Chief, Military Nutrition Division
U.S. Army Research Institute of Environmental Medicine
Natick, Massachusetts 01760-5007

Dear Colonel Askew:

As you requested in your letter July 20, 1992 I will ask Dr. Gerald Berenson to provide a final report on the Fort Polk Heart Smart Project.

In prior correspondence (copies attached) I have asked for submission of the Fort Polk Heart Smart Project Report as part of the Final Report for Grant #DAMD17-88-Z-8023. However, I will revise this request and ask that Dr. Berenson submit a project report to be provided separately.

Please contact me if I can provide further information or assistance.

TYE .... (16 A

Donna H. Ryan, M.D.

Associate Executive Director

mcl



### Pennington Biomedical Research Center

LOUISIANA STATE UNIVERSITY

July 28, 1992

Gerald S. Berenson, M.D.
Director, National Center for
Cardiovascular Health
Tulane School of Public Health
1430 Tulane Avenue
New Orleans, LA 70112-2699

Dear Dr. Berenson:

Please review the attached correspondence. Colonel Askew requests a final report on the Fort Polk Heart Smart Project. Therefore, I will revise my prior request to you (that asked for a final project report to be submitted as part of the overall grant Final Report).

Colonel Askew states in his letter that the project "is of considerable importance to the Army, (and) we would like to have a report detailing goals, methods, results and recommendations."

I spoke to Cathy Champagne today and she assured me that all of the ETNV data had been forwarded to Theresa Nicklas. Please let me know if there is other information that I can provide that will expedite this report.

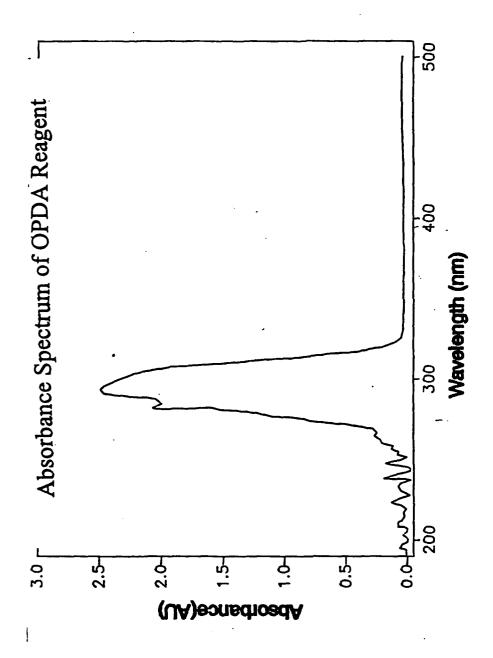
Sincerely,

Donna H. Ryan, M.D.

Associate Executive Director

jgw

cc: Colonel Askew



### AAUU Abstract Form

### Abstract Form PRESENTING AUTHOR Name Richard Tulley Business Address Pennington Biomed Res Ctr Notes 6400 Perkins Road

Telephone 504-765-2524 TOPIC AREA NUMBER (See list of topics)

New Enzymatic Method for the Analysis of Vitamin C in Plasma and Automation on the Beckman CX5, Richard Tulley (Clin. Research Lab., Pennington Biomedical Research Ctr, Baton Rouge, LA 70808).

Many methods for the analysis of ascorbic acid (AA) have suffered from lack of specificity, are difficult to automate, may necessitate the performance of double reaction schemes to remove interferences by dehydroascorbic acid (DHAA) or other substances, or require the use of corrosive reagents. HPLC methods have shown good sensitivity and specificity, but are somewhat lengthy and difficult to automate. O-phenylenediamine (OPDA) has been used as a fluorescent reagent for the analysis of AA, however, because it reacts with DHAA and other substances, two analyses must be performed to determine AA free from interferences. I have developed a new rate method for the analysis of vitamin C using ascorbate oxidase (AO) and have successfully automated this method on the Beckman Synchron CX5. With this method total ascorbic acid can be measured in a single analysis.

In this procedure AA is oxidized by ascorbate oxidase to DHAA, which then reacts with OPDA to form the quinoxamine derivative. This product is then measured at 340 nm. OPDA drives the reaction to completion and allows the removal of interfering substances prior to the addition of AO. Optimal conditions have been determined; these include the use of final concentrations of 0.4 g/L OPDA and 1.7 mg/L AO in pH 6.5 phosphate buffer. Calibration is performed using 5 and 20 mg/L aqueous standards. Linearity is up to 200 mg/L. Stabilization of sample is achieved by the addition of 50 ul of metaphosphoric acid/dithiothreitol (400 g/L/8.25 g/L) to 500 ul of heparinized plasma followed by centrifugation. Samples may be stored for extended periods of time at -70° C prior to treatment. Recovery is 94% with a CV of 6% at 13.4 mg/L.

This work was supported by the US Army Research and Development Command. Opinions, interpretations and conclusions and recommendations are those of the author and are not necessarily endorsed by the US

Return this form and four copies along with selfaddressed postcard; cancelled by an approved postal carrier no later than December 16, 1991 to: ☐ Check here if entering Student Poster Contest. (See instruction on page 12A).

1992 ABSTRACTS
AACC Office
2029 K Street, N.W., Suite 700
Washington, D.C. 20006 USA
DO NOT FOLD THIS FORM

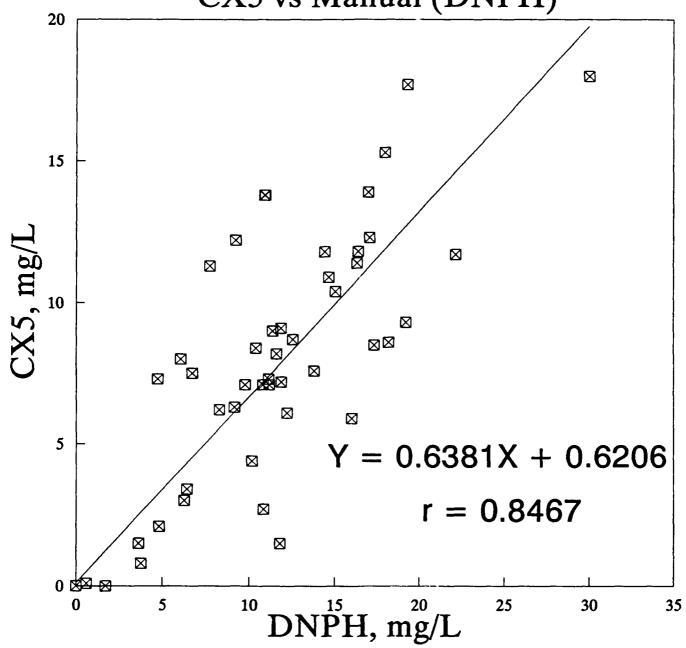
Signature Kuhard

Presenting Author

\_05\_

### **ASCORBIC ACID**

CX5 vs Manual (DNPH)



Procedure Adopted: 629-92
Prepared By: Killey Rid
Title: Cha Res Liv Direction

### CLINICAL RESEARCH LABORATORY PENNINGTON BIOMEDICAL RESEARCH CENTER

### 2.33 VITAMIN C in Serum (VITC) Beckman Synchron CX5

2.33 A. PRINCIPLE: In this method, Vitamin C (ascorbic acid) is oxidized by ascorbate oxidase (AO) to Dehydroascorbic Acid (DHAA). The product is analyzed by reacting it with o-phenylenediamine (OPDA) at pH 6.5. The resulting product absorbs at 340 nm. Interfering substances (and any DHAA in the sample) which react with OPDA are eliminated by performing the reaction for five minutes prior to addition of the ascorbate oxidase. Ascorbate Oxidase is then added and the rate of the reaction for the next five minutes is monitored. This rate is proportional to the amount of Vitamin C present in the sample. The reaction scheme is shown below:

AO OPDA Ascorbic Acid ----> DHAA ----> DHAA-OPDA product

Degradation of the ascorbic acid in plasma is rapid. It is oxidized readily to DHAA. To prevent this, a mixture of metaphosphoric acid (MPA) and dithiothreitol (DTT) is added prior to the analysis of the sample. The DTT effectively reduces DHAA to ascorbic acid and the MPA deproteinizes the sample to prevent further oxidation. In this method, neither of these compounds are in enough quantity to interfere with the ascorbate oxidase or the reaction with OPDA.

2.33 B. SPECIMEN: Heparinized plasma is the sample of choice. Collect blood in a green top vacutainer tube, mix well, and centrifuge immediately at 5° C. Separate the plasma. If the sample is to be analyzed immediately, follow the sample preparation instruction in the **Procedure** section below. If the sample is not to be analyzed immediately it may be stored safely at -70° C in cryovials. At the time of analysis, thaw the sample at room

temperature (<u>DO NOT HEAT THE CONTROLS IN A WATER BATH OR AT AN ELEVATED TEMPERATURE.</u>)

2.33 C. REAGENTS: Reagents are made at PBRC from analytical grade reagents.

Phosphate Buffer (0.1 mol/L, pH 6.5) - Weigh 11.5470 grams of NaH<sub>2</sub>PO<sub>4</sub> (Sodium Phosphate Monobasic) (Mallinkrodt, Catalog #7892) and 3.8853 grams of Na<sub>2</sub>HPO<sub>4</sub> (Sodium Phosphate Dibasic Heptahydrate) (Mallinkrodt, Catalog #7914). Dissolve in approximately 800 ml of deionized water in a 1000 ml beaker. With stirring, adjust the pH to 6.5 with hydrochloric acid or sodium hydroxide solution. Transfer to a 1000 ml volumetric flask and fill to the mark with deionized water. Store in a plastic bottle. Stable one year when stored refrigerated at 4°C.

 $NaH_2PO_4 - 11.5470 g (0.8368 mol/L)$  $Na_2HPO_4 - 3.8853 g (0.1632 mol/L)$ 

OPDA (0.5 g/L) - Weigh 0.0500 g o-phenylenediamine dihydrochloride (Sigma, Catalog #P1526) (stored in white freezer). Transfer to a 100 ml volumetric flask and dissolve in pH 6.5 phosphate buffer (above) and dilute to the mark with pH 6.5 phosphate buffer. Store in an amber bottle refrigerated at 4°C. Reagent is stable for at least a month when stored this way or on the CX5. Perform calibration and QC checks to verify stability. This reagent can be poured into Compartment A of the VITC reagent cartridge.

Ascorbate Oxidase Stock Solution (1 mg/ml) - Add X ml of deionized water to a vial containing X mg of ascorbate oxidase (Sigma, Catalog Number A0157, 1000 Units). For example, 5 ml of water should be added to a vial containing 5 mg of ascorbate oxidase; 4 ml for a vial containing 4 mg, etc. The water may need to be added in increments if the vial is not big enough to contain the entire volume. Mix well and aliquot 200 ul into cryovials. Store at -70° C.

Ascorbate Oxidase Working Solution (0.04 g/ml) - Thaw a vial of ascorbate oxidase stock solution. Pipet 4.8 ml of phosphate buffer, pH 6.5, into a test tube. Pour a small amount of the buffer into the vial (1-1.5 ml); mix and transfer this into the test tube containing the remaining buffer. Repeat this procedure several times until all of the ascorbate oxidase has been dissolved in the buffer. This solution should be mixed well by inversion and transferred to Compartment C of the VITC reagent cartridge. Stable for at least a month on the instrument. Perform calibration and QC checks to verify stability.

MPA/DTT Solution, 400/8.25 g/L, respectively-Weigh 4.0 g of Metaphosphoric Acid (Aldrich, Catalog #23,927-5) and 0.08250 g of Dithiothreitol (stored in white refrigerator)(Sigma, Catalog #D0632) and transfer both to a 50 ml beaker. On a magnetic stirrer, mix with approximately 7 ml of deionized water. When dissolved, transfer the contents to a 10 ml volumetric flask and fill to the mark with deionized water. Prepare fresh each day of use.

### Ascorbic Acid Standards

Stock 500 mg/L - weigh 0.0500 g of ascorbic acid (Sigma, Free Acid, Catalog #A0278), transfer to a 100 ml volumetric flask. Dissolve in a small amount of deionized water, add 10 ml of MPA/DTT solution, and fill to the mark with deionized water. Mix well and store at 4° C. Note: This can be made without MPA/DTT if the calibration standards are prepared immediately, and they are made with MPA/DTT.

Linearity and Calibration Solutions, 100, 80, 60, 40, 20, 10, 5, and 2.5 mg/L - Into separate 10 ml volumetric flasks pipet the volumes of the 500 mg/L Stock Standard shown in the table below. Add 1 ml of MPA/DTT solution and fill to the mark with deionized water. Store refrigerated at 4° C. Use the 5 and 20 mg/L standards for calibration.

Concentration	Volume of Stock
100 mg/L	2.0 ml
80 mg/L	1.6 ml
60 mg/L	1.2 ml
40 mg/L	800 ul
20 mg/L	400 ul
10 mg/L	200 ul
5 mg/L	100 ul
2.5 mg/L	50 ul

2.33 D. CALIBRATION: Calibrate the CX5 using the 5 and 20 mg/L ascorbic acid standards. Calibration is stable for several days. The calibration of the 20 mg/L standard should have a REACTION reading of approximately 0.005-0.006. The calibration factor should be approximately 3000-4000.

2.33 E. QUALITY CONTROL: Controls for Vitamin C are prepared from Bio Rad I and II Unassayed Serum Chemistry Controls. Since there is little or no Vitamin C in these controls, we must prepare our own controls by spiking these controls with Vitamin C and treating them with MPA/DTT solution.

Reconstitute 2 vials each of Bio Rad I and II with 10 ml of deionized water for each vial. After the solutions reconstituted, combine both vials of Level I in a small beaker and both vials of Level II in another beaker. To Level I add 200 ul of the 500 mg/L ascorbic acid stock standard. To Level II add 600 ul of the 500 mg/L ascorbic acid stock standard. Mix each beaker well using a magnetic stirrer. Pipet 5 ml of each level into 4 separate test tubes for each level. To these add 500 ul of MPA/DTT solution. Vortex each tube and centrifuge for 10 minutes at 4000 rpm. Pipet the supernatant from each tube into another test tube and filter these through Tip Top filters (Helena). Aliquot 500 ul of each filtrate into cryovials for Levels I and II. Store these at -70° C until use. When used, thaw these controls at room temperature. Do not use the water bath or an elevated temperature. This causes more proteins to precipitate and erroneous values to be obtained. Perform quality control measurements each day of analysis to verify reagents and method integrity. Since these have already been treated with MPA/DTT do not re-treat these samples with MPA/DTT. Analyze these directly.

- 2.33 F. PROCEDURE: For each sample to be analyzed, in a 10x75 test tube, pipet 500 ul of heparinized plasma. Add to this, 50 ul of MPA/DTT solution, vortex well, and centrifuge at 3000 rpm for 10 minutes. Pipet the supernatant into small cups for analysis on the CX5. After calibrating and performing QC procedures, run these samples using the VITC method on the instrument. The dilution of the sample is corrected for by a slope of 1.1 on the instrument and need not be accounted for.
- 2.33 G. CALCULATIONS: Verify that the CX5 is set up to have a slope adjustment of 1.1 in the CAL OPTIONS screen. Pres [F3 CAL], [F6 CAL OPTIONS], press 4 [SLOPE/OFFSET] and press [ENTER]. Press [Page Down] until Vitamin C is listed. Verify that 1.1 is entered in the Slope column and the 0.0 in the Offset column. This factor will automatically correct samples for the dilution factor of 1:11. Otherwise, no calculations are required.
- 2.33 H. REPORTING RESULTS: Results are reported as obtained from the CX5.
- 2.33 I. PROCEDURE NOTES: The use of MPA/DTT reduces all DHAA back to ascorbic acid and stabilizes it. Samples do not need to be stored with MPA/DTT as long as they are stored at -70° C. Plasma may be treated with MPA/DTT and then stored, however, they should be thawed at room temperature and should not be treated with more MPA/DTT before analysis. Too much MPA/DTT interferes with the

reaction, either resulting in falsely high or low values or a "RESULTS SUPPRESSED" message. Therefore, to prevent confusion, it is recommended that samples be stored untreated and treated with MPA/DTT immediately prior to analysis.

2.33 J. LIMITATIONS & INTERFERENCES: Other than the interference by excess MPA/DTT, no interferences are known at this time. Most interferences in the sample should be corrected for by the blanking reaction with OPDA only.

### 2.33 K. REFERENCES:

- 1. Pachla LA, Reynolds DL, and Kissinger PT. Analytical methods for determining ascorbic acid in biological samples, food products, and pharmaceuticals. J Assoc Official Analyt Chemists 1985; 68:1-12.
- 2. Liu TZ, Chin N, Kiser MD, and Bigler WN. Specific spectrophotometry of ascorbic acid in serum or plasma by use of ascorbate oxidase. Clin Chem 1982; 28:2225-2228.
- 3. Deutsch MJ and Weeks CE. Microfluorometric assay for vitamin c. J Assoc Official Analyt Chemists 1965; 6:1248-1249.
- 4. Tulley RT. New enzymatic method for the analysis of vitamin c in plasma and automation on the beckman cx5. Clin Chem 1992; 38:1070.

### 2.33 L. SUPPLEMENTAL MATERIALS:

None

### 2.33 M. REVIEW:

Vitamin C (VITC)

Prepared: June 1992

By: Richard Tulley, Ph.D.

Director

Clinical Research Laboratory

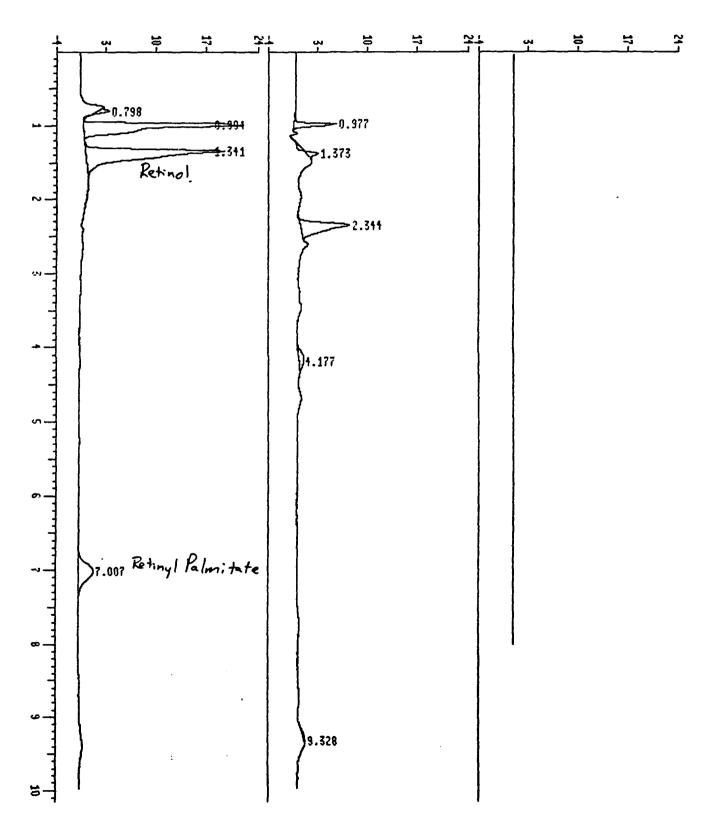
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### RETINOL CHROMATOGRAM

10-25-91 Precision Studies Retinol and Retinyl Palmitate

1: LC A 320,4 550,100 of 1025A10A.D 2: LC B 450,4 550,100 of 1025A10A.D

3: LC X FLUORESCENCE of 1025A10A.D



### AAUU Abstract Form

### P

PRESENTING AUTHOR	Temp. #
Name Deonne Bodin	Perm. # Notes
Business Address Pennington Biomed Res Ctr	
6400 Perkins Road	
Baton Rouge, LA 70808-4124	MODIC ADEA MINORD
Telephone 504-765-2524	TOPIC AREA NUMBER (See list of topics) 05

For Office Use:

Erythrocyte Enzyme Assays as Markers of Nutritional Status on the Beckman CX5, Deonne Bodin and Richard Tulley (Clin. Research Lab., Pennington Biomedical Research Ctr, Baton Rouge, LA 70808)(spon. Richard Tulley).1

Erythrocyte levels of the enzymes aspartate aminotransferase (EAST), glutathione reductase (EGR), and transketolase (ETK) have been used as markers for vitamins B<sub>6</sub> (pyridoxal phosphate) (P5P), B<sub>2</sub> (riboflavin) (FAD), and B, (thiamine)(TPP), respectively, because each of these enzymes requires the corresponding vitamin as a cofactor. Also, in vitro addition of these cofactors to samples prior to analysis results in enhancement of the respective enzyme activity. The degree of this enhancement or activation has been correlated to the nutritional vitamin status of individuals. These assays may be indications of long term vitamin status compared to plasma vitamin assays which may reflect short term status. We have adapted methods by Bayoumi [Clin. Chem. 22, 327-335 (1976)] for the analysis of these enzymes on the Beckman Synchron CX5 with in vitro activation by addition of their respective cofactors.

In this procedure a red cell hemolysate adjusted to approximately 1.0 g/dL hemoglobin is used in the assay of each of the erythrocyte enzymes with (+) and without (-) the addition of the cofactor. For EAST activity the Beckman AST cartridge is programmed as a user defined chemistry, using separate samples for EAST+ and EAST-. The procedure uses a pretreatment of the hemolysate with P5P (EAST+) or buffer (EAST-). Procedures for EGR and ETK measure the hemolysate directly. EGR+ reagent contains buffer, EDTA, and oxidized glutathione in compartment A, FAD or water (EGR-) in B, and NADPH in C. ETK+ reagent consists of ribose 5 phosphate, glycerol dehydrogenase/triose phosphate isomerase, and NADH in A and TPP or water (ETK-) in C. All of the assays are measured at 340 nm over five minutes using Rate 1 reactions.

This work was supported by the US Army Research and Development Command. Opinions, interpretations and conclusions and recommendations are those of the author and are not necessarily endorsed by the US

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1992 ABSTRACTS AACC Office 2029 K Street, N.W., Suite 700 Washington, D.C. 20006 USA DO NOT FOLD THIS FORM

Signature \_

### ERYTHROCYTE AST SETUP

Ø4 Jan 9. 12:05:45 Page 1

### SYNCHRON CXS

### USER DEFINED CHEMISTRIES

UbuR ib#: 11

Test Name: EHST Reaction Type: [RATE 1]

Reaction Direction: [NEGATIVE]
Units: [TU/L]

Decimal Precision: [x.xx]

Calculation Factor: 3817

Math Model: [LINEAR] Cal Time Limit: 336 hr No. of Calibrators: ป

Frimary Wavelength: [340] nm Secondary Wavelength: 1700] nm

Bample Volume: 23 dL Amimany Inject Rgt:

A: 242 aL B: B uL

CALIBRATORS

MULTIPOINT SPAN

REAGENT BLANK

Start Read: 250 sec End Read: ತಟ್ಟ sec Low ABS Limit: -1.300 High ABS Limit: 1.500

LSABLE RANGE

Lower Limit: 0.00 Upper Limit: 99999.00 REACTION

Stant Read: 32 sec End Read: 300 sec Low ASS Limit: -1.500 High ABS Limit: 1.500

SUBSTRATE DEPLETION

Initial Rate: -99.999 Delta ABS: 1.500

### ERYTHOCYTE GLUTATHIONE REDUCTASE IN VITRO STIMULATED (POSITIVE)

Ø4 Jan 10:09: Fage :

### SYNCHRON CX5

### USER DEFINED CHEMISTRIES

USER 10#: 12

Test Name: EGRP

Reaction Type: [RA:E 1]

Reaction Direction: [NEGATIVE]

Units: [IU/L]

Decimal Precision: [X.XX]

Calculation Factor: 10538

math Model: [LINEAR] Cal Time Limit: 336 hr

No. of Calibrators: Ø

Hermany Wavelength: [340] nm Secondary Wavelength: [380] nm

Sample Volume: 10 uL Primary Inject Rgt:

A: 215 at

B: 10 at

Secondary Inject Kqt:

U: 10 L

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CAL1284.085

MULTIPUINT SPAN

REAGENT BLANK

Stant Read: 336 sec

Eno Read: 368 sec

Low ABS Limit: -1.500

High ABS Limit: 1.500

REALITON

Start Read: 452 sec

End Read: 720 sec

Low ABS Limit: -1.500

High ABS Limit: 1.500

USABLE RANGE

Lower Limit: 0.00

Upper Limit: 99999.ผิน

SUBSTRATE DEPLETION

Initial Rate: -99.999

Delta ABS: 1.500

### ERYTHROCYTE GLUTATHIONE REDUCTASE NOT STIMULATED (NEGATIVE)

**04** Jan 93 12:10:05 Page 1

### SYNCHRON CXS

### USER DEFINED CHEMISTRIES

USER ID#: 13

Test Name: EGRN

Reaction Type: [RATE 1] Reaction Direction: [NEGATIVE]

Units: [[U/L]

Decimal Precision: [X.XX]

Calculation Factor: 10538

Math Model: CLINEARI Cal Time Limit: 336 hr No. of Calibrators: W

Frimary Wavelength: [340] na Secondary wavelength: [380] na

Sample Volume: 10 UL CALIBRATORS MULTIPOINT SPAN

Primary inject agt:

A: 215 uL B: 10 uL

Secondary inject Agt:

C: 10 LL

Add Jime: /20 sec

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KEHBEN! BLANK \_\_\_\_\_\_\_

Start Read: 336 sec

End Read: 368 sec Low ABS Limit: -1.500

High ABS Limit: 1.500

REHULLION \_\_\_\_\_

Start Read: 452 sec

End Read: 720 sec

Low ABS Limit: -1.500

High ABS Limit: 1.500

USABLE RANGE

\_\_\_\_\_ Lower Limit: 0.00

Upper Limit: 99999.00

SUBSTRATE DEPLETION \_\_\_\_\_

Initial Rate: -99.999

Delta ABS: 1.500

### ERYTHROCYTE TRANSKETOLASE IN VITRO STIMULATED (POSITIVE)

Ø4 Jan 93 12:10:12 Page 1

### SYNCHRON CXS

### USER DEFINED CHEMISTRIES

USER ID#: 14

Test Name: ETKP

Reaction Type: [RATE 1]
Reaction Direction: [NEGATIVE]

Units: [[U/L]

Decimal Precision: [x.xxj

Calculation Factor: 3614

Math Model: [LINEAR] Cal Time Limit: 336 hr

No. of Calibrators: ιλ.

Primary Wavelength: [340] nm Secondary Wavelength: [380] nm

Sample Volume: 25 de CHEIBRA:ORS Frimary Inject Rgt: -----

A: 246 uL C: 10 aL

MULTIPOINT SPAN

REAGENT BLANK

Start Kead: 2/2 sec End Read: 304 sec Low ABS Limit: -1.500 High ABS Limit: 1.500

USABLE RANGE

Lower Limit: 0.00 Upper Limit: 99999.00 REACTION

Start Read: 420 sec End Read: 720 sec Low ABS Limit: -1.500 High ABS Limit: 1.500

SUBSTRATE DEPLETION

Initial Rate: -99.999 Delta ABS: 1.500

### ERYTHROCYTE TRANSKETOLASE NOT STIMULATED (NEGATIVE)

04 Jan 93 12:10:13 Page 1

### STACHRON CAS

### USER DEFINED CHEMISTRIES

USER ID#: 15

Test Name: ETKN Reaction Type: [RATE 1] Reaction Direction: [NEGATIVE]
Units: [IU/L]

Decimal Precision: [X.XX]

Calculation Factor: 3614

Math Model: [LINEAR]

Math Model: [LINEHR]
Cal Time Limit: 336 hr
No. of Calibrators: 0

Primary Wavelength: [340] nm Secondary Wavelength: [380] nm

Sample Volume: 25 uL Primary inject Rgt:

A: 246 UL U: 10 uL

CALIBRA: ORS

MARC TWIDELIJUM

REAGENT BLANK

Start Read: 272 sec End Read: 304 sec Low ABS Limit: -1.500 High ABS Limit: 1.500

USABLE RANGE

Lower Limit: 0.00 Upper Limit: 99999.00

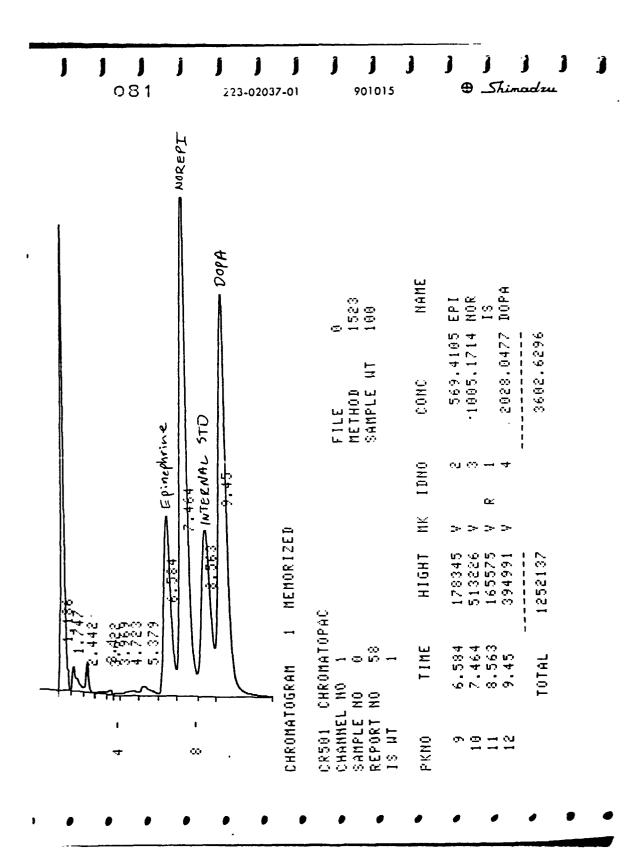
REACTION

Start Read: 420 sec End Read: 720 sec Low ABS Limit: ~1.500 High ABS Limit: 1.500

SUBSTRATE DEPLETION

Initial Rate: -99.999 Delta ABS: 1.500

### CATECHOLAMINE CHROMATOGRAM



COMPREHENSIVE CHEMISTRY

EVALUATION

KIT MAILED: 6/24/91 QUEST. EVAL: 10/07/91

PAGE 02

SURVEY SET: C - B
CAP NUMBER: 38988-01-01-01 KIT# 01
ATTENTION:
INSTITUTION: PENNINGTON BIOMEDICAL RSCH CTR

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# COMPREHENSIVE CHEMISTRY

## EVALUATION

CAP NUMBER: 38988-01-01-01 KIT# 01

TOUR REPORTED METHOD I		ALUATE	ON AND	10	ATIVE	-METH	1	STATISTICS	38	PLOTS	SOF	2	LATIV	LATIVE DISTANCE	NOE	OF YOUR	RES	RESULTS
	SPE	YOUR	EVAL		SD	NO.	IOS	LIMITS ACCEPTAB LOWER	TTS OF TABILITY UPPER	2012	- 1 -	ATT S	PERCE 0 - 2	NIAGEN OFTARGET SCHOOL	) i	+ 100E	+100=UPPER LIMI	LIMI
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NO COMPARATIVE METHOD 10-	00-11																	
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EVALUATION

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ASURE ORTED WETHOD					] ; • ! • !	E   2	5		TS OF	-100H	ARGET	ASPI	RCENT 0	GES O	4		VIAT	NH
ATIVE METHOD	INEN	RESULT	CODE	MEAN	SO	LABS	IOS	OWER	UPPER	OTR -	00 -7		<b>10</b> +				5 1	0+
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NO COMPARATIVE METHOD	99999																	
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## EVALUATION

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METHOD PRINCIPLES METHOD  THEN REPORTED METHOD  THEN REPORTED METHOD  THEN RESULT GODG MEAN SD LASS SDI LONGER AUTHOR OF 1.100=LONGER LIMITY  THEN REPORTED METHOD  THEN RESULT GODG MEAN SD LASS SDI LONGER AUTHOR OF 1.100=LONGER LIMITY  THEN REPORTED METHOD  THEN RESULT GODG MEAN SD LASS SDI LONG TO 1.200	CONSTITUENT	TUENT	! ! !	EVALUATION AND COMPARAT	N AND	COMPAR	ATIVE-M	METHOD	STAT	ISTICS		PLOT	HERE	LATIVE	DISTA	0		RESU	1.75
CHOQUE W.O PPR (C-12 86 13 203-6 5-6 115 +0.3 162 - 245 918 32 104 85 13 85.3 3.7 111 +0.1 168 - 103 914 1-11111 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	NO IO		NAP		EVAL	Z	S		I I	COEPT			LIMIT		TARGE TO THE TARGET	1 1 1		PER 75	LIMI
ETHOD PRINCIPLES   D-11   197.3   25.0   2928 + 40.3   40.4   40.	IRON MCG/DI MEG/DI BECK	CHROME W/O PPR	:::::	205 86 100 100		885.8 85.8 71.7	99780			70007	400-0	<b>~:::: →</b>							
NOT PERFORMED   C-11   C-12   918	1 11	METHOD PRINCIPLES	00-11-11-11-11-11-11-11-11-11-11-11-11-1	# 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		987.98 96.33 70.0	04044	* + + +   	00000										
METHOD PRINCIPLES [C-12]  METHOD PRINCIPLES [C-13]  1.47 .13 1849  1.47 .13 1849  1.47 .13 1849  1.47 .13 1846  1.47 .07 1815  ACID  ATION AUT  1.6-12 4.2 23 3.97 .37 1292 +0.6 3.2 - 4.8    MAN SYNCHRON CX4/5   MAN SYNCHRON CX4/5   MAN SYNCHRON CCA15  1.12 .18 1283 +2.1 - 3.1    MAN SYNCHRON CX4/5   MAN SYNCHRON CCA15	LITHIUM MMOL/I MMOL/I TESI NOT	NOT PERFORMED IIVEN	0000									916 017							
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	8	COMPARATIVE METHOD	0-111					† 	į										



# COMPREHENSIVE CHEMISTRY

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## EVALUATION

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YOUR REPORTED METHOD	SPEC- YOUR EVAL IMEN RESULT CODE	! ~!	NO. LABS	ACCEPTAB LOWER	100 AT0	- 10 1	0 TARGET	25		PER LINIT
MAGNESIUM MG/DL 10-11 CALMAGITE 10-13 BECKMAN SYNCHRON CX4/51C-14	C-11 2.5 13 C-12 1.4 13 C-14 4.2 13 C-15 2.0 13	2.47 .07 1.37 .06 4.11 .12 4.25 .13			<u> </u>		57	4 6		
T T T T T T T T T T T T T T T T T T T	0-11 0-12 0-13 0-14 1.15 0-15	2.32 1.21 4.02 1.30 1.86	3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	0.04 0.05 0.05 0.05						
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NO DOMPARATIVE WETHOD 10-12	0-11 0-12 0-13									
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EVALUATION

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COMPREHENSIVE CHEMISTRY

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YOUR REPORTED METHOD	SPEC	YOUR	EV COV	MEAN	os	NO.	IOS	LIMITS ACCEPTAE LOWER	S OF BILITY UPPER		100=LOWER   TR -100 -7	LIMIT	)	0=TARGET	. I.V.			1001
\$	C-11   C-12   C-13	4 00 20		4.14 7.79 8.07	31.32	236 241 239	+1.0 +1.0 +1.0	3.7	4.6 8.7 0.0	918 918	! !							
ALL METHOD PRINCIPLES ALL INSTRUMENTS	0000			3.95 7.60 7.83	228 35 4 4 4	000	+1.6 +1.6 +1.6											
SIUM-SERUM /L N SELEC./DILU CKMAN SYNCHRO	1 00000			1 8 - 0 UN	80000	212 212 212 215 211	07.07.0			9 B 8 V					2-11			
ALL POTASSIUM COMMON	0-112	∾ w o o w o w o w o w o w o w o w o w o	4444		200110	686 671 682 682	7.22.84	1 1 1 1 1 1 1 1 1 1 1 1	1 0 0 0 0 0 4 7 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8			:						
PROTEIN, TOTAL-SERUM G/DL BIURET BECKMAN SYNCHRON CX4/51	1 00000	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \		1 040	40220	04000	0.00 0.00 0.00		20070	8			7		e H			1 1 1
BIURET ALL INSTRUMENTS	00000			6.97 5.11 6.07 6.47	2000 2000 2000	60000 6000 6000 6000 6000	00000 74041											



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EVALUATION

CONSTITUENT		EVALUATION AND COMPARATI	ON AND	COMPAR	: 13	-WETHOD		STATISTICS	1 1 1		P	l ա	ATIVE	DISTANCE	NCE	OF YOUR	RESUL	ULTS
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COMPARATIVE METHOD	IMEN	RESULT (	SOE S	MEAN	SO	LABS	SDI L	LOWER	OWER UPPER	1 at 1	1 1		-25	0 +	25	50	75	100
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NO COMPARATIVE METHOD IC.13	000 1200 1200 1200 1200 1200 1200 1200																	
M-SERUM /L N SELEC./DILUTED CKMAN SYNCHRON CX	1,500-11 1,500-11 1,500-11			148.1 131.4 153.6 127.4	040-m	44.00 2012 44.00 0012	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0			81.0 41.0				13				
ALL INSTRUMENTS	00000	2000 2000 2000 2000 2000		148.5 131.6 154.2 160.1	12221	268 268 2678 2657 2667	0.040	1274 150 150 123	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1									
T-3 UPTAKE X UPTAKE TEST NOT PERFORMED	00-11 00-11 00-11 00-11 1133									918 A1								
NO COMPARATIVE METHOD	1	<b>i</b> :			• • • • • • • • • • • • • • • • • • •			<b>!</b>										
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# COMPREHENSIVE CHEMISTRY

## EVALUATION

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YOUR REPORTED METHOD COMPARATIVE METHOD	N N N N N N N N N N N N N N N N N N N	- YOUR RESULT	EVAL T CODE	NEAN	SO	L AB	IQS	ACCEPTABIL		-117	OWER L	TIME	2 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	TARGET	25 1	+100=U		<u> </u>
PTAKE TAKE UNITS TEST NOT PERFORMED	0-00-0									9 9 18 V								
COMPARATIVE WETHOD	0000 1444																	
THYROID STIM. HORMONE UL/ML TEST NOT PERFORMED	0-11 0-12 0-13									<b>6</b>		<del></del>						<del></del> -
NO DOMPARATIVE METHOD (C-13						1 : 1												
THYROXINE MCG/DL TEST NOT PERFORMED	12000									9 I B			-					
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EVALUATION

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COMPARATIVE METHOD	SPEC	YORES	EVAL	MEAN	SD	NO. LABS	IOS	ACCEPTABJ	ABILITY UPPER	1 - 100=L	1 1 7 1		0=1 -25	T 0=TARGET 50 -25 0	25	00=UPPE 50 75	ER LIM
SFEREIN DL EST NOT PERFORMED	0-11 0-12 0-13			: : :						918 918							
NO COMPARATIVE METHOD 1	6-11 6-11 6-11				12.14.13.15.15.15.15.15.15.15.15.15.15.15.15.15.	# 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1								
MUTH GLDH N SYNCHRON CX4/5	25575			<b>I</b> ::::::::::::::::::::::::::::::::::::	1	77777	++1.1			918 91A				2			
UREASE WITH GLDH	15555		-	24.05 24.05 24.03 24.04	1.00 m	88888888888888888888888888888888888888	+10.7	2 4 4 2 1 4 5 2 1 4 5 2	20021								
ACID L ICASE CKMAN SYNCHRON CX4/51	. 00000:			6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	1172	22 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.000 0.000 0.000			918 91A				1-12-1			
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### EVALUATION

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COMPARATIVE METHOD 1	) i	ALUAIT	ON A NO	COMPAKALL	> ¦ -		1 .	STIMITE TO A STREET	5 15 0F 481 11<	- 100 - 100	ARGE	ASP	THE RELATIVE DITS AS PERCENTA	TAGES OF A	OF AL	ALLOWED +100=	OWED DEVIATION 100=UPPER LIMIT	ATION
MYLASE-SERUM I	IMEN	RESULT	CODE	MEAN	SD	LABS	IOS	OWER	UPPERI	OTR -	0 +		-2		25		75	
	111	401				50		72		918				-2-	<del>-</del>	- + + + + + + + + + + + + + + + + + + +		,-
NCHRON CX4/51		3.8.5 8.8.5 8.0.0		342.6 336.9 129.9	 vo.4 vv.e vv.e	256 257 260	m - 0 +	315 308 117	373 - 366 - 143	914			- i	-11				
NO COMPARATIVE METHOD 10-1 10-1 10-1	1224C																	
CKMAN SYNCHRON CX4/51C		14.0 14.0 14.0 17.0 17.0	80000	60.9 137.2 139.3 71.3	W440W	280 280 278 278 277	1 + + + 1 0 - 0 - 0 0 - 1 - 0 - 1	109 111 117 57	7.4 168 177 177	918 91A				2-2		•		
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	1004N	1196 176 176 176		69.4 198.1 178.6 172.9	w o o o o o o o o o o o o o o o o o o o	270 270 269 269 271	00000 10000	80014 80144	2228 2008 7006	8 K				, , , , , , , , , , , , , , , , , , ,				
NO COMPARATIVE METHOD 10-1																		



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EVALUATION

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	<u> </u>	H	AND	12	S S	-METHOD	- 1	STATISTICS		PLOTS	PLOTS OF THE	ы ₹	RELATIVE DIST	•	NCE OF	YOU Y	~ 5	RESULTS
YOUR REPORTED METHOD	<u> </u>		£V <b>≱</b> !			2		LIMITS	0F 1	-100=LOWER	LOWER L			ш .		+100=UPPER	UPPER	LIMI
ARATIVE METHOD	HWEN	RESULT	CODE	MEAN	SD	LABS	T IQS	LOWER UPPER	UPPER	٦ <u>۲</u>	1 1	2	-2	0 +	25	50	75	100
GOT	00000	55 166 146 145		53.4 60.1 44.6 61.6	04400 00000	00000000000000000000000000000000000000	-+++- -+	128 116 115 15 105	1931 1741 741	918 91A				12				
NO COMPARATIVE METHOD	00-00 10-00-0 11-00-0 11-00-0																	
INE KINASE CKMAN SYNCHRON CX4/ CKMAN/37 C	2000 0000 1122 1122 1122 1122 1123	200 4 4 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	23462	20 8 2 2 2 2 2 3 2 3 3 3 3 3 3 3 3 3 3 3 3	13.0 29.8 27.6 29.7	262 263 263 263 263	000	166 806 8399 1824 1821	247 785 785 566 593 272	918 91A		1	12	1-2-2				<del></del> -
NO COMPARATIVE METHOD	0-0-0																	
HAN SYN		56 160 192		8 N N	2.6 6.1 7.5	237 236 234	+0.4 +0.7 +0.5			91B								
NO COMPARATIVE METHOD	0-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1																	
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# COMPREHENSIVE CHEMISTRY

## EVALUATION

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CONSTITUENT	I EV	EVALUATION AND COMPARAT	N AND	COMPARAT	ATIVE-M	AETHOD	STAT	ISTICS		PLOT	S OF	HER	ELATIVE DIST	DISTA	e o	YOU	RESUL.	SP
OUR REPORTE	· OH	YOUR EVAL	l	MEAN		NO. LABS	SDI LO	ACCEPTABI	OF	-100=LOWER	LOWER 100 -7	E I	25	· W · i	25		; J {	H IO
LACTATE DEHYDROGENASE   C-11 IU/L BECKMAN SYNCHRON CX4/51C-13 BECKMAN/37 C   C-14	00000	346 346 346 146			12.6 12.9 12.3 6.1	267 0 269 0 268 0 268 +- 0	กสองส	117 2302 277 114	177 453 427 173	918 918 914				121	-21			
METHOD	10-112 10-122 10-124 10-124 10-124													-				
APOLIPOPROTEIN A1 MG/DL TEST NOT PERFORMED NOT GIVEN							1 : : : : : : : : : : : : : : : : : : :			918 918								
NO COMPARATIVE METHOD (C-17	0-16																	
APOLIPOPROTEIN B MG/DL TEST NOT PERFORMED NOT GIVEN	10-16 10-17								-	918				_				-
NO COMPARATIVE METHOD IC-17	0-14	0-17																
																	Æ	F



### EVALUATION

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SPEC - YOUN EVAL REAL SOLUTIONER UNDER LINE - 15 SEC - 25 SEC -	CONSTITUENT UNIT OF HEASURE YOUR REPORTED WETHOD	EVAL	EVALUATION AND	AND	COMPARAT	IVE	-METHOD	ST	ATISTICS	0F	PLOT FROM - 100=		E AS I	RCENT.	LATIVE DISTANCE PERCENTAGES OF 0=TARGET	ICE OF	E OF YOUR RESUL ALLOWED DEVIAT +100=UPPER L	RESUI DEVIA PPER I	LTS THON
FROL (C. 16.16 (ZB) 10 138.3 19.9 2381 -5.5   918   914   914   914   915   91	CONPARATIVE METHOD		OUR E		EAN	_	NO.		ACCEPTAB .OWER	ILITY	OTR	-75		-25	0	25	50	75	100
SYNCHRON CX4/5 C-16   189.0   4.8   277   1.0   918   1111   C     C-16   189.0   4.8   277   1.0   918   1111   SYNCHRON CX4/5 C-19   279.2   280   0.3   215   276   216   2	OLESTEROL BLYCERIDE /S	10-16 10-17	( <u>G</u> 222	1 1/1		9.0	375	1 100		i :::	·								
C SYNCHRON CX4/5 C-19	NO COMPARATIVE METHOD	10-16 10-17																	
HIGH WILTICON ANALYZERS C	40LESTEROL L AG/OL ENZYMATIC BECKMAN SYNCHRON CX4/5	00-11-0 00-11-		129 179 255		80000		1.0 0.9 0.6 0.8			918	-	175777	1 1 2	•				
CHOLESTEROL (L)	ENZYMATIO ALL MULTICON ANALYZERS	00-198 00-198 00-198	1292 174 254 205	14 26 14 26 14 26 14 26	08077	40400	1800 1800 1800 1800 1800 1800 1800 1800	-000- -000-	160 100 100 111 111	: <b>(</b>									
COMPARATIVE WETHOD 1G-16 1G-19 1G-19 1G-20	: QQXX	00-00 1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-			พดเหน		0 ~ © 0 ©	1:			81 K								
	COMPARATIVE METHOC	0000 1110 1110 1110 1110 1110 1110 111																	
													<b>!</b> ₩			1	t :: :	(2 <u>1</u>	<u> </u>



# COMPREHENSIVE CHEMISTRY

### EVALUATION

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CONSTITUENT		EVALUATION AND COMPARATE	AND	COMPARA		VE-METHOD	STATE	STICS		PLOTS FROM T	S OF THE	REL AS P	ATIVE PERCENT		CE OF	OWED DEVIATION		ωž
YOUR REPORTED METHOD	SPEC-	; <u> </u>	SODE SODE	Z	_	NO. LABS	SDI LO	LIMITS OF ACCEPTABILIT LOWER UPPE	OF I ILITY! UPPER!	-100=LOWER	1 1	LIMIT 5 -50	0 = -25	TARGET	25	+100=UPPER 50 75		LIMIT
	0-16 0-17 0-13 0-13	109 1258 179	111121	•	6.6	96 1994 1991 1991 1991		91 - 178 - 111 - 162 - 133 -	131 231 205 178	91B 91A				-1				
NO COMPARATIVE METHOD 10-16																		
BILIRUBIN, DIRECT MG/DL TEST NOT PERFORMED NOT GIVEN	ED 12									9 9 10 0 4 10							+	
NO GOMPARATIVE METHOD 1C-11	10-11 10-12 10-93					r											·: ·: •	
BILIRUBIN, TOTAL C-93 MG/DL DIAZO J-G W/O BLANK   BECKMAN SYNCHRON CX4/5!	6-0	2.0 10	2.0 10 1.98	1.98	0	217	+0.2			91B CHANGE 91A								
ALL METHOD PRINCIPLES   ALL INSTRUMENTS	# 6 2 1			1	10	0+	9.7											
						1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2											15 15 15 15 15 15 15 15 15 15 15 15 15 1	: •\



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EVALUATION

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COMPREHENSIVE CHEMISTRY

CONSTITUTENT	<b>U</b>	EVALUATION AND COMPARAT	ND COMPARAT	1 H 1	IVE-METHOD	VE-METHOD STATISTICS	SOL	PLOTS OF THE RELATIVE DISTANCE OF YOUR RESULTS FROM TARGETS AS PERCENTAGES OF ALLOWED DEVIATION	THE R	ELATIV	E DISTA	NCE OF	YOUR	RESUI DEVIA	TS
YOUR REPORTED METHOD	SPEC	YOUR EVAL RESULT CODE	L MEAN		NO.	SDI LOWE	무리를	1	R LIMI	T 50 -2	0=TARGE	25	+100=UPPER LINI 50 75 100	PPER 1	LIMI
AMMONIA UMOL/L TEST NOT PERFORMED NOT GIVEN	G-97						l stit	918 1METHOD 1DHANGE							
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THE FREE CRITICIAN PAINTINGESS RECOMMENDS THAT THE PESULES OF THIS INTERLADORATORY COMPARISON NOT BE USED AS A SOLE CRITCHING THE PERFORMANCE OF ARY INDIVIDUAL CLINICAL LAGORATORY

1611-11

EVALUATION

KIT MAILED: 9/23/91 QUEST. EVAL: 11/23/91

COMPREHENSIVE CHEMISTRY SURVEY SET: C - C
CAP NUMBER: 38988-01-01-01 KIT# 01
ATTENTION:
INSTITUTION: PENNINGTON BIOMEDICAL RSCH CTR

THE NO		EVALUATION	QX	COMPARATT		- NETHOD	l s	ATISTICS		PLOTS	OF TH	REL	ATIVE D	DISTANCE	, o	YOUR RE	RESULTS
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PARATIVE METHOD	LINE	RESULT	CODE	MEAN	SD	LABS	SDI L	OWER	UPPER	OTR -1	00 -75	-50	-25		N+ 1	0 75	100
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CAP NUMBER: 38988-01-01-01 KIT# 01

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CAP NUMBER: 38988-01-01-01 KIT# 01

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# COMPREHENSIVE CHEMISTRY

### EVALUATION

CAP NUMBER: 38988-01-01-01 KIT# 01

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YOUR REPORTED METHOD COMPARATIVE METHOD	1	SPEC- YOUR EVAL	EVAL	KEAN	\$   	NO.	SDI L	LIMITS OF ACCEPTABILITY LOWER UPPER	S OF BILITY UPPER	100 H	100=LOWER   TR - 100 - 7		+ 22 G	PERCENIAGES O=TARGET 0 -25 0	23.	3001		THE COL
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# COMPREHENSIVE CHEMISTRY

CAP NUMBER: 38988-01-01-01 KIT# 01

## EVALUATION

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YOUR REPORTED METHOD COMPARATIVE METHOD	SPEC	SPEC- YOUR EVAL IMEN RESULT CODE MEAN SD	EVAL	KEAN S	SD	NO.	IOS	ACCEPTABILITY!	TABILI UPP		100=154G	- 1 - 1	Hii		25 0	9ET 0 2	1 1 1	+100=UPPER 50 75	PER LINI	10
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CAP NUMBER: 38988-01-01-01 KIT# 01

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YOUR REPORTED METHOD				1	\$ \$ \$ \$	j 1 1 1	Ş		LIMI	ACCEPTABLE OF TAKE	1	-100=COWER LIMI	FR C		20	PERCENIAGES OF	5 L	*100=UPPER LINI		אבר בא מר בא
ARATIVE METHOD	1	RESULT (	T CODE	!	MEAN	SD	LABS	IOS	LOWER	iddn	6	101	75	-50	1 23	0 †		50	-	- :
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# COMPREHENSIVE CHEMISTRY

CAP NUMBER: 38988-01-01-01 KIT# 01

TOUR REPORTED METHOD SPECTOR EVAL COMPARATIVE METHOD IMEN RESULT CODE MEAN SD PREALBUMIN TEST NOT PERFORMED  NO COMPARATIVE WETHOD (C-22)	NO. LABS SDI	S OF BILITY UPPER!	-100=LOWER LI	MTT DETABLET +100EU		101 - 1010 1111
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COMPREHENSIVE CHEMISTRY

CAP NUMBER: 38988-01-01-01 KIT# 01

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# COMPREHENSIVE CHEMISTRY

## EVALUATION

CAP NUMBER: 38988-01-01-01 KIT# 01

CONSTITUENT   EVALUAT	YOUR REPORTED METHOD 1 SPEC YOUR COMPARATIVE METHOD 1 IMEN RESULT	SERUME 10 /OL EASE WITH GLDH 10 CKMAN SYNCHRON CX4/51C	UNEASE WITH GLDH 16-21 4 ALL AUTO CHEM INSTR 16-23 2 16-24 5	ACID 10-2 L LCASE 10-2 CKMAN SYNCHRON CX4/5/G-2	IDASE 16-21 5. IDASE 16-22 7. L INSTRUMENTS 16-23 6. 16-24 8.	ASE-SERUM ECKMAN SYNCHRON CX4/51 ECKMAN/37 C	10.22 10.22
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COMPREHENSIVE CHEMISTRY

EVALUATION

CAP NUMBER: 38988-01-01-01 KITH 01

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CKMAN SYNCHRON CX4/5 CKMAN/37 C	00-22 00-22 00-22 00-22 00-22		1 20 10 10 10 10 10 10 10 10 10 10 10 10 10	160. 77. 171. 67.	98480	**************************************	230 230 230 230 230 230 230 230 230 230	<b>74400</b>	1367 1367 146 1768 1768	185 195 197 197	0 6 6			1-31				
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COMPARATIVE METHOD	INEN 26	RESULT C	CODE	MEAN	SS	LABS	Sor	LOWER	UPPER	21 OTR -1	18	-75	- 50	25	0 +	25	20	75
CREATINE KINASE 10-21 IU/L BECKMAN SYNCHRON OX4/SIG-23 BECKMAN/37 C 10-24	0-22 0-23 0-23 0-24	210 459 476 194		220.6 483.9 241.8 514.8	128.0 13.0 14.3 14.3	822 822 924 919	-1.2 -1.2 -1.2	20071 70000 90000 90000	00000 00000 00000	- 12 4 8 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6					-1-1-1-2			
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DAMMA GLUTAWYL TRANS IU/L Beckman Synchron CX4/S Beckman/37 C	0-21 0-21		00	159.1	พพ	28 23 23 24	2.0			918								
NO COMPARATIVE METHOD	00-21									<b>₹</b>								
ACTATE DEHYDROGENASE   G-21 IU/L BECKMAN SYNCHRON CX4/51G-23 BECKMAN/37 C 1G-24	0-23 0-23 0-24 38	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		346.5 346.5	12.0 12.7 13.7	330 330 329	000-0	1112 254 - 124 - 277 -	1868 1868 1871 1871	9 9 6				31-1				
NO COMPARATIVE METHOD	0.22 0.22 0.23 0.24	1								Y					2-21			



COMPREHENSIVE CHEMISTRY

CAP NUMBER: 38988-01-01-01 KIT# 01

CONSTITUENT		EVALUATION AND COMPARA	NOH	QN CC	MPARA	TIVE	TIVE-METHOD	ST	ATISTICS	S		PLOTS	TS OF THE	•	RELATIVE DISTANCES DE	DISTANCE	່ພ້	OF YOU	່ແ້	RESULTS
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.1 DRMED	10-26																			
NO GOMPARATIVE WETHOD 16-27	10-26																			
APOLIPOPROTEIN B WG/DL TEST NOT PERFORMED NOT GIVEN	G-26 G-27										9 B						-		·   <del></del> -	.
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# COMPREHENSIVE CHEMISTRY

CAP NUMBER: 38988-01-01-01 KITH 01

CONSTITUENT			Z:	· ·		METH	STA	ATISTICS		7	P	E R	LATIVE	DISTANCE	NCE OF	YOUR	RESULT	118
TOUR REPORTED METHOD COMPARATIVE METHOD	NED	YOUR E	EVAL	MEAN SD	OS	NO.	SDI L	COEPTA	Z = Z	20 2	-100 -75		7	TARGET		100=n	100=UPPER LINI 50 75 100	100
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ENZYMATIC ALL WULTICON ANALYZERS	00-24 00-24 00-24 00-24			299.0 181.7 216.5 195.8 266.3	0.000 0.000 0.000 0.000	952 977 977	0000 0000 0000			¥16								- 1. - 3 +
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NO COMPARATIVE METHOD	100000									<b>416</b>								
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* * * * ·	0-24 0-24 0-24 0-28									91A								



COMPREHENSIVE CHEMISTRY

CAP NUMBER: 38988-01-01-01 KIT# 01

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BIL IRUBIN, DIRECT	SPED- YOUR EVAL	EVAL T CODE	KE AZ		NO.	! ◄ ┛ !	LIMITS OF COEPTABILITY OWER UPPER		100 FE	<품 : :	XT PERCEN XT 0 XT 0 XT - 2 - 50 - 25	1 4 A B E	1 10 1	<b>⊒</b> i i i	*100=UPPER 50 75	THE COLUMN
NOT GIVEN	76-0							0 8 6 6							_	
NO COMPARATIVE WETHOD 1	<b>4</b>															
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AMMONIA UMOL/L GLUTAMATE DEHYDROGENASI			30.0		52 0:3			910								. [
BECKMAN SYNCHRON CX4/51	<b>8</b> 6 - O							816 1416							-   -   -   -	
NO COMPARATIVE METHOD	HOOH.															



COMPREHENSIVE CHEMISTRY

KIT MAILED: 12/16/91 QUEST. EVAL: 2/08/92

PAGE 01

College of American Pathologists 325 Wankegan Road Northiteld. Illinois 60083-2750 8000323-4040

EVALUATION

SURVEY SET: C - D CAP NUMBER: 38988-01-01-01 KIT# 01
ATTENTION: INSTITUTION: PENNINGTON BIDMEDICAL RSCH CTR

PENNINGTON BIOMEDICAL RSCH CTR CLINICAL RESEARCH LABORATORY 6400 PERKINS RD. LA 70808

1991

EVALUATION

SURVEY SET: C - D CAP NUMBER: 38988-01-01-01 KIT# 01 ATTENTION: INSTITUTION: PENNINGTON BIOMEDICAL RSCH CTR

COMPREHENSIVE CHEMISTRY 1991

PAGE 02

KIT MAILED: 12/16/91 QUEST. EVAL: 2/08/92

College of American Pathologists 325 Warkegan Road Northreld, Illinois 80083-2730 800323-4040

CONSTITUTE		EVALUATION	AND	COMPARATIVE-METHOD	ATIVE-	METHOD	,	STATISTICS	_	PLOTS OF THE RELATIVE DISTANCE OF YOUR	S RESULTS
UNIT OF MEASURE YOUR REPORTED METHOD	SPEC	YOUR	At DE	MEAN	gs	NO.		S OF BILI UPP	1	ARGETS AS PERCENTAGES OF AL OWER LIMIT O TARGET	DEVIATIO
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-		200 200 200 200 200 200 200 200 200 200	4444	11.91 10.49 12.51 14.22	388 31 5 21 5 20 5 30 13	5284 5294 5300 5300	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	10.9 - 13. 13.2 - 13. 9.0 - 15.	0 0 0	918 1-2-12	

College of American Pathologists 325 Walkegan Road Northlield. Illinois 60083-2780

PAGE 03

COMPREHENSIVE CHEMISTRY SURVEY SET: C - D CAP NUMBER: 38988-01-01-01 KIT# 01

EVALUATION

CALCIUM  CALCIUM  CALCIUM  C-31  C-31  C-31  C-31  OMPARATIVE METHOD  C-31  OMPARATIVE METHOD  C-31  OMPARATIVE METHOD  C-32  C-32  MAN SYNCHRON CX4/5  C-33  MAN SYNCHRON CX4/5  C-34  C-35  C-35  MAN SYNCHRON CX4/5  C-36  C-37  C-31  C-32  C-33  MAN SYNCHRON CX4/5  C-33  C-34  C-35  C-35  C-36  C-37  C-31  C-32  C-33  C-34  C-34  C-34  C-35  C-35  C-35  C-36  C-37  C-31  C-31	MEAN SD LA	LIMITS OF ACCEPTABILITY BS SDI LOWER UPPER	91B
DRIDE  C-31  OCOMPARATIVE METHOD  C-32  NO COMPARATIVE METHOD  C-31  NO COMPARATIVE METHOD  C-32  NO COMPARATIVE METHOD  C-33  OL/L  C-34  ION SELEC. / DILUTED  C-32  ION SELEC. / DILUTED  C-33  ALL CHLORIDE COMMON GP C-32  ALL CHLORIDE COMMON GP C-32  ALL AUTO CHEM INSTR  C-31  C-31  C-31  109  14  199  C-34  101  28  10  28  10  28  10  28  10  28  10  28  10  28  10  28  10  28  10  10  10  10  10  10  10  10  10  1			
DRIDE C-31  ND COMPARATIVE METHOD C-32  ND COMPARATIVE METHOD C-32  ND COMPARATIVE METHOD C-32  100 SELEC. /DILUTED C-32  100 SELEC. /DILUTED C-32  100 14 109.1  ALL CHLORIDE COMMON GP C-32  ALL CHLORIDE COMMON GP C-32  ALL AUTO CHEM INSTR  C-35  10 14 100.9  C-31  C-31  C-35  10 28.6			2 <b>2 2 2 3 3 3 3 3 3 3 3 3 3</b>
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DRIDE C-31 108.3  OL/L  ION SELEC. / DILUTED C-32  ION SELEC. / DILUTED C-33  IOS. 1  C-32  C-33  IOS. 1  IOS. 0  IOS.			
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BECKMAN SINCHRON CX4/5 C-33 BECKMAN SINCHRON CX4/5 C-34 C-35 ALL CHLORIDE COMMON GP C-32 106 14 109.1 ALL AUTO CHEM INSTR C-33 116 14 114.6 C-35 101 14 100.9 C-35 10 28.6		4.0+	91D
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ALL AUTO CHEM INSTR C-33 116 14 114.6 C-34 131 14 129.8 C-35 101 14 100.9	2.3	0 103 - 1	918
C-31 28 10 28	46.4	+0.5 108 - 121 +0.3 123 - 137 +0.0 95 - 106	91A 1211
91 01 81 75-7	28.6 1.1 229 16.8 .9 231	0 + 0 : <del>-</del>	016
ION SELEC./DILUTED  BECKMAN SYNCHRON CX4/5			216
NO COMPARATIVE METHOD C-32		; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ;	89
			4:00

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College of American Pathologists 323 Washegan Road Northlest. Illinois 80033-8750

COMPREHENSIVE CHEMISTRY

EVALUATION

SURVEY SET: C - D
CAP NUMBER: 38988-01-01-01 KIT# 01

CONSTITUENT	E	EVALUATION AND	ON AND	COMP	ΑT	-METHO		STATISTICS		ننا	RELATIVE DIS	ш	OF YOUR R	R RESULTS
YOUR REPORTED METHOD COMPARATIVE METHOD	SPEC	OUR	EVAL	MEAN	as	1 .00 1	SDI	LIMITS OF ACCEPTABILITY LOWER UPPER	OF UPPER	-100*LOWER LIM	S PERCENIAGE IT 0=1AR -50 -25	101	######################################	ER LIMIT
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GLU OXIDASE O2 ELEC ALL AUTO CHEM INSTR	0-0 0-0 0-0 0-0 0-0 0-0 0-0 0-0 0-0	271 113 113 281 320	4444	257.7 108.3 271.2 308.8	6000	828 825 811 811	+ + + + + + + + + + + + + + + + + + + +	231 - 244 - 277 - 277 - 277	284 120 299 340	81 6 81 61	-	152	1121	

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COMPREHENSIVE CHEMISTRY

SURVEY SET: C - D CAP NUMBER: 38988-01-01-01 KIT# 01

EVALUATION

PAGE DS College of American Pathologists 325 Warkegan Road Northield, Illinois 60083-2750 8001323-4040 1991

CONSTITUENT	<u> </u>	EVALUATION AND	N AND	COMPAR		I VE -METHOD		STATISTICS		RELATIVE DISTANCE	75
YOUR REPORTED METHOD COMPARATIVE METHOD	SPEC-	YOUR	EVAL	MEAN	as	NO. LABS	SDI LC	LIMITS OF ACCEPTABILITY LOWER UPPER		-100*LOWER LIMIT O=TARGET +100*UPPER LIMIT -100*LOWER LIMIT O=TARGET +100*UPPER LIMIT -100 -75 -50 -25 0 25 50 75 100	IMIT 100
DL Rrachrome W/O Ckman Synchro	C-31 C-32 C-33 C-34	74 66 72 84 60	<u>6 6 6 6 6</u>	75.2 66.8 78.2 89.6		138 141 139 142 142 142	6.0111	60 - 53 - 71 - 51 -	94 108 177		
ALL METHOD PRINCIPLES ALL INSTRUMENTS	C-31 C-32 C-33 C-34 C-35			79.9 70.2 83.7 96.1 67.3		3020 3025 3034 3036	001-1-	1 1 1 1 1	1 1 1	918 32 91A	
LACTIC ACID MMOL/L OXIDATION AUT BECKMAN SYNCHRON CX4/5	C-31 C-32	1.2	233	2.31	.20 1	1445 (+	+2.0) +2.1)		80.	91D	i
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COMPREHENSIVE CHEMISTRY

SURVEY SET: C - D
CAP NUMBER: 38988-01-01-01 KIT# 01

EVALUATION

CONSTITUENT		EVALUATION AND COL	N AND	COMPAR	MPARATIVE -METHOD	-METHO	1	STATISTICS		P.C.	PLOTS OF THE	THE R	ELATI	VE DI	RELATIVE DISTANCE	E OF	YOUR	RESU	JLTS
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ARATI	IMEN	RESULT	CODE	MEAN	as	LABS	SDI	LOWER UPPER	UPPER	OTR	8		-50		0	25	50	75	9
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YNCHR			£ £	4.71	÷ 5	254 258	-0.1 +0.5	3.5 -	8.0 0.0	910					1-2-1	-			
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	10-33			61.7		100	9.1.	1 1	1 1	-:-	- :	- :	- :	- :	- :	- ;	- !	-	-
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TEST NOT PERFORMED										910					•		·		
NO COMPARATIVE METHOD	C-31 C-32			; ; ; ;	1			 		918									
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College of American Pathologists 323 Wantegan Road Northfield, Illinois 60083-2750 800323-4040

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COMPREHENSIVE CHEMISTRY

EVALUATION

SURVEY SET: C - D CAP NUMBER: 38988-01-01-01 KIT# 01

CONSTITUENT		ALUA	N AND	COMPA	ATIVE-	Æ		STATISTICS		PLOTS 0	OF THE RELATIVE DISTANCE	VE DIST	ш	OF YOUR	R RESULTS	LTS
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	C-31 C-32	6. R	ច ច	7.75	6 C C	255	4.0.4	0 4 8 0 0 6 1 1	6.6	910			2-1			
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ALL	ee-0			7.47			+2.1			9 t		- <u>-</u> -		<del></del>		
POTASSIUM-SERUM	C-31	! ! ! !	! ! !	5.36	.07	1	÷0.6			016			22	-		
MMOL/L ION SELEC./DILUTED	00			3,79 5,65	0. 80 0.	229 . 231 .	4 0.5 0.4			_						
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G/DL	C-32		ξ.		2:		9 0-	<u>س</u>	9.0							
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THE COURCE OF AMERICAN PATHOLOGICES PECOMMENDS THAT THE RESULTS OF THIS INTERLABORATORY COMPARISON NOT HE USED AS A SOLE CRITERION FOR JUDGING THE FEROMMANCE OF ANY INDIVIDUAL CENTRAL ASSOCIATIONS OF ANY INDIVIDUAL CENTRAL ASSOCIATION FOR JUDGING THE FEROMMANCE OF ANY INDIVIDUAL CENTRAL ASSOCIATION FOR JUDGING THE FEROMMANCE OF ANY INDIVIDUAL CENTRAL ASSOCIATION FOR JUDGING THE FEROMMANCE OF ANY INDIVIDUAL CENTRAL ASSOCIATION FOR JUDGING THE FEROMMANCE OF ANY INDIVIDUAL CENTRAL ASSOCIATION FOR JUDGING THE FEROMMANCE OF ANY INDIVIDUAL CENTRAL ASSOCIATION FOR JUDGING THE FEROMMANCE OF ANY INDIVIDUAL CENTRAL ASSOCIATION FOR JUDGING THE FEROMMANCE OF ANY INDIVIDUAL CENTRAL ASSOCIATION FOR JUDGING THE FEROMMANCE OF ANY INDIVIDUAL CENTRAL ASSOCIATION FOR JUDGING THE FEROMMANCE OF ANY INDIVIDUAL CENTRAL ASSOCIATION FOR JUDGING THE FEROMMANCE OF ANY INDIVIDUAL CENTRAL ASSOCIATION FOR JUDGING THE FEROMMANCE OF ANY INDIVIDUAL CENTRAL ASSOCIATION FOR JUDGING THE FEROMMANCE OF ANY INDIVIDUAL CENTRAL ASSOCIATION FOR JUDGING THE FEROMMANCE OF ASSOCIATION FOR JUDGING THE FEROMMANCE OF ASSOCIATION FOR JUDGING THE FEROMMAN FOR JUDGING THE FEROMM

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COMPREHENSIVE CHEMISTRY

SURVEY SET: C - D CAP NUMBER: 38988-01-01-01 KIT# 01

EVALUATION

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COMPREHENSIVE CHEMISTRY

EVALUATION

SURVEY SET: C - D CAP NUMBER: 38988-01-01-01 KIT# 01

College of American Pathologists 328 Waskegan Road North/leid, Hunois 80083-2750

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COMPREHENSIVE CHEMISTRY

SURVEY SET: C - D CAP NUMBER: 38988-01-01-01 KIT# 01

EVALUATION

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College of American Pathologists 328 Wantegan Road Northleid, Illinois 80083-2750

COMPREHENSIVE CHEMISTRY

SURVEY SET: C - D CAP NUMBER: 38988-01-01-01 KIT# 01

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SURVEY SET: C - D CAP NUMBER: 38988-01-01-01

PLOTS OF THE RELATIVE DISTANCE OF YOUR RESULTS FROM TARGETS AS PERCENTAGES OF ALLOWED DEVIATION -100=LOWER LIMIT 0=TARGET +100=UPPER LIMIT

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EVALUATION AND COMPARATIVE-METHOD STATISTICS

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DEX SUL 50,000MW /MG BECKMAN SYNCHRON CX4/5

C-36H C-37H C-38H C-39H C-40H

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C-36 C-37 C-38 C-39 C-40

ENZ-COLOR W/OGB W/OSB BECKMAN SYNCHRON CX4/5

TRIGLYCERIDE (L)

C-36 C-37 C-38 C-39 C-39

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COMPREHENSIVE CHEMISTRY

SURVEY SET: C - D CAP NUMBER: 38988-01-01-01 KIT# 01

EVALUATION

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PAGE 15

CONSTITUENT		EVALUATION AND COMP	AND	COMPARA	ARATIVE-METHOD	METHOC	STATISTICS	PLO"	TS OF THE !	PLOTS OF THE RELATIVE DISTANCE	ANCE OF	OF YOUR R	RESULTS
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PAGE 46 325 Waukegan Road North/ield, Minols 60093-2750 800/323-4040

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SURVEY SET: C - D CAP NUMBER: 38988-01-01-01 KIT# 01

COMPREHENSIVE CHEMISTRY

EVALUATION

IF YOU HAVE SUBMITTED YOUR 1992 ORDER, YOUR NEXT CHEMISTRY SURVEY KIT (C1-A, C2-A, C3-A, C4-A OR C5-A) IS SCHEDULED TO BE SHIPPED ON MARCH 16, 1992.

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CHEMISTRY-SERIES 3

EVALUATION

SURVEY SET: C3 - A
CAP NUMBER: 38988-01-01-01 KIT# O1
ATTENTION:
INSTITUTION: PENNINGTON BIDMEDICAL RSCH CTR

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EVALUATION CHEMISTRY-SERIES 3

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က EVALUATION CHEMISTRY-SERIES

SURVEY SET: C3 - A
CAP NUMBER: 38988-01-01-01 KIT# 01
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EVALUATION CHEMISTRY-SERIES 3

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SURVEY SET: C3 - A
CAP NUMBER: 38988-01-01-01 KIT# 01
ATTENTION:
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TLUTED  C-03  135.4 1.5 257 +0.4  C-04  NCHRON CX4/5 C-05  N COMMON GP  C-05  N COMMON GP  C-05  131 14 129.7 1.7 3103 +0.8 125 - 134  C-01  131 14 129.7 1.7 3103 +0.8 125 - 134  C-02  N COMMON GP  C-03  140 140 150.7 1.7 3103 +0.8 125 - 134  C-03  140 140 170 1.7 3103 +0.8 125 - 134  C-03  140 140 170 1.7 3103 +0.8 125 - 134  C-04  166 14 166 7 2.4 3089 -0.3 162 - 174  C-05  136 14 135.2 1.7 3103 +0.5 131 - 140  C-03  FORMED  C-04  NT MANUF  C-05  41.37 4.23 1749  C-05  41.37 4.23 1748  C-05  C-05  C-05  C-06  C-07		C-01			129.4	1.3	256	+1.2	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	-   -	- 1		: _
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SYNCHRON CX4/5 C-05  SYNCHRON	MMOL/L	C-03			139.4	_ . 3	258	+0.5					
SYNCHRON CX4/5   C-05   134 B 1 3 258 +0.9   91D   1-111		0-0 40-			166.3	1.7	254	-0.2					
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TRUMENTS  C-03 140 14 135.7 1.9 3097 +0.2 151 - 160  C-04 166 14 135.7 1.9 3097 +0.2 151 - 160  C-05 140 14 139.9 1.8 3100 +0.1 135 - 144  C-05 136 14 135.2 1.7 3103 +0.5 131 - 140  C-06  ERFORMED  C-07  GENT MANUF  C-08  GENT MANUF  C-09  GENT MANUF  C-09  GENT MANUF  C-04  GENT MANUF  C-05  GENT MANUF  C-05  GENT MANUF  C-05  GENT MANUF  C-05  GENT MANUF  C-06  GENT MANUF  C-07  GENT MANUF  C-07  GENT MANUF  C-07  GENT MANUF  C-06  GENT MANUF  C-07  GENT MANUF	1		134	14	7 001		103						
TRUMENTS C-03 140 14 139.9 1.8 3100 +0.1 135 - 144 C-05 136 14 166.7 2.4 3089 -0.3 162 - 171 918 C-05 136 14 135.2 1.7 3103 +0.5 131 - 140 C-01 C-02 C-03 C-03 C-04 C-05 C-05 C-05 C-05 C-05 C-05 C-05 C-05	SODIUM COMMON	20-0	156	4	155.7		1097	0 0					
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C-02 C-03 C-04 C-05 GENT MANUF C-02 C-03 GENT MANUF C-02 G-03 G-04 GENT MANUF C-02 G-03 G-04 G-05 G-0		C-01	! ! !	; ; ; ;	, ; ; ; ;	; ; ; ;	<u> </u>	* ! !	 	<u> </u>			!
C-05 C-05 C-05 A2.44 4.09 1744 C-01 42.44 4.09 1744 C-02 34.74 3.09 1750 C-03 41.37 4.23 1749 C-03 41.37 4.23 1749 C-05 41.80 4.21 1756		C-03									92A		
C-05  REAGENT MANUF C-02 34.74 4.09 1740  C-03 41.37 4.23 1749  C-04 33.64 4.07 1751	PERFORMED	C-04											
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1992

က CHEMISTRY-SERIES

EVALUATION

SURVEY SET: C3 - A
CAP NUMBER: 38988-01-01-01 KIT# 01
ATTENTION:
INSTITUTION: PENNINGTON BIOMEDICAL RSCH CTR

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3/16/92 5/16/92

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CONSTITUENT UNIT OF MEASURE	> ! !	EVALUATION AND COMPAKA	DNA -			1 1 1 1					AS PERCENIAGES OF	A T T T T T T T T T T T T T T T T T T T		DEVIATION	Z
YOUR REPORTED METHOD	SPEC- IMEN	YOUR E	EVAL CODE N	MEAN	NO. SD LABS	S SDI	LIMITS OF ACCEPTABILITY I LOWER UPPER	O=LOWER LI	LIMIT 75 -50	0=TA	O=TARGET 5 0 2	1 100	+100=UPPER 50 75		LIMIT 100
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NO COMPARATIVE METHOD	C-03 C-03 C-04 C-05					• • • •		2	- ·				····		
THYROID STIM, HORMONE UU/ML TEST NOT PERFORMED	0-02 0-03 0-03 0-05							92A		-		_	_		<del>-</del>
ALL REAGENT MANUF	C-02 C-03 C-03 C-05		-6-4-	3.29 1.29 1.87 1.81	.22 1899 1.80 1908 .23 1897 1.99 1908										
THYROXINE MCG/DL TEST NOT PERFORMED	C-02 C-03 C-03 C-05					} ! !		92A 91D			-				-
ALL REAGENT MANUF	C-02 C-03 C-04 C-05	1 2 4 1 1	1	15.92 6.72 16.51 7.11	2.10 3099 74 3099 2.14 3073 80 3095 2.19 3072			51 81 81 81 81 81 81 81 81 81 81 81 81 81							

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CHEMISTRY-SERIES 3

EVALUATION

SURVEY SET: C3 - A CAP NUMBER: 38988-01-01-01 KIT# 01 ATTENTION: INSTITUTION: PENNINGTON BIOMEDICAL RSCH CTR

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CONSTITUENT	EV	EVALUATION	N A NO	COM	PARATIVE-METHOD	METHOD	STATISTICS	STICS		E RELATIVE DISTANCE	RESULTS
YOUR REPORTED METHOD	SPEC-	YOUR	· > 0 !	Z	S	SB.	1	IMITS EPTAB		2 - 1 - 2	JPPER LIMIT
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UREA - SERUM MG N/DL UREASE WITH GLDH BECKMAN SYNCHRON CX4/S	0-02 0-03 0-05 0-05	1 1 1 1 1	i I I	26.3 51.7 28.6 56.1	8.4.8.0	257 +0 257 +0 255 +0 253 -0 258 +0	0.0 0.2 0.5 0.6 0.6	1 1 1 1 1 1	! !	92A	1
UREASE WITH GLDH ALL AUTO CHEM INSTR	C-03 C-03 C-05	27 52 29 29 56 56	4444	25.5 51.3 27.9 55.8 26.8	1.3 39 1.4 39 2.6 39 1.4 39	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	4.0000	23 - 25 - 25 - 25 - 25 - 25 - 25 - 25 -	301	916	-
URIC ACID MG/DL URICASE BECKMAN SYNCHRON CX4/5	0-03 0-03 0-05	 		6.64 6.64 6.64 6.64 6.64	4 8 1	338 -0 338 -0 338 -0 337 -0	70000		1	92A 1-12-1	
URICASE ALL INSTRUMENTS	C-02 C-03 C-04 C-05	0 00 00 00 - 7 0 00 00	44444	6. 12 6. 69 6. 69 9. 17 6. 43	30 55 33 55 51 56 32 55	55 18 -0 5642 -0 5509 -0 5641 -0	-001-4	3.00 × 0.	10.0 10.0 10.0 10.0 10.0	916	

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CHEMISTRY-SERIES 3 EVALUATION

SURVEY SET: C3 - A CAP NUMBER: 38988-01-01-01 KIT# 01 ATTENTION: ATTENTION: PENNINGTON BIOMEDICAL RSCH CTR

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3/16/92 5/16/92 KIT MAILED: QUEST. EVAL:

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UNIT OF MEASURE YOUR REPORTED METHOD	1 0				!		!	LIMITS	TS 0F	FROM - 100#	TARGETS AS LOWER LIMIT		NTAGES OF O=TARGET		ωQ	VIATI	WED DEVIATION OO-UPPER LIMIT
COMPARATIVE METHOD	IMEN	RESULT	CODE	MEAN	SD	LABS	SDI	LOWER	ACCEPIABILITY LOWER UPPER	QTR - 100	- 75	-50 -25	0	25 5	i o	75	8
ACID PHOSPHATASE IU/L TEST NOT PERFORMED NOT GIVEN	C-01 C-02									92 A					 		^ 
NO COMPARATIVE METHOD	C-01 C-02		: ! !		 		 	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			<del></del>						
ALT SGPT IU/L BECKMAN SYNCHRON CX4/5 BECKMAN/37 C		65 123 70 761 67	5 5 5 5 5	63.3 124.0 69.5 136.2	0.4.0.4.0 0.0.0.0	329 332 331 331	0.5 0.5 0.2 0.2	50 99 109 53	- 76 - 149 - 844 - 164	92A							
ND COMPARATIVE METHOD										9 6 0 81	· · · · · · · · · · · · · · · · · · ·				·		
ALKALINE PHOSPHATASE IU/L BECKMAN SYNCHRON CX4/5 BECKMAN/37 C	0-03 0-03 0-04 0-05	46 162 50 176 48	6666	48.6 171.8 52.7 185.9 50.9	9.7 2.2 2.3 8.3	341 341 341 342 343	0.111	39 150 44 162 42	. 194 - 194 - 61 - 210	92A 91D			i i i				_
NO COMPARATIVE METHOD	0-	1 1 1 1 1 1			1	1		1 1 1		9 tc 81 8			1-31				· · · · · · · · · · · · · · · · · · ·

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CHEMISTRY-SERIES 3
E V A L U A T I O N

SURVEY SET: C3 - A
CAP NUMBER: 38988-01-01-01 KIT# 01
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CONSTITUENT	 	VALUATI	N AND	COMPA	ATIVE	-METH		STATISTICS		نبد	OF YOUR RESULTS
YOUR REPORTED METHOD	PEC-	YOUR	· mc	1	S	. □∢.	SDI	IMITS EPTAB	OF SILITY UPPER	KOM TARGETS AS PERCENTAGES OF 100=LOWER LIMIT O=TARGET TR -100 -75 -50 -25 O	ALLUWED DEVIATIO +100=UPPER LIM
ASE-SERUM L Man Synchro Eckman/37 c	C-03 C-03 C-04 C-05	3 4 4 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	6 6 6 6	136.9 332.4 149.6 362.2 143.4	4 0 4 0 4 4 0 4 0 8	321 322 322 322 323	00000	123 - 304 - 136 - 329 - 129 -	150 160 160 150 150 150		
NO COMPARATIVE METHOD	0-02 0-03 0-04 0-05				 	i ! !		 		91C 1121	
AST SGOT IU/L BECKMAN SYNCHRON CX4/5 BECKMAN/37 C	C-01 C-03 C-03 C-04 C-05	59 143 63 155 62	6.0000	57.7 142.6 62.2 154.3 60.2	20.00.00	351 351 348 348	6.04	146 - 149 - 123 - 48 -	70 172 75 186 73	92A 91D	
NO COMPARATIVE METHOD	0-02 0-03 0-03 0-05			! ! ! !	 	† 	1 1 1 1	1 1 1 1 1 1		9 18 12 12 12 12 12 12 12 12 12 12 12 12 12	•
CREATINE KINASE IU/L BECKMAN SYNCHRON CX4/5 BECKMAN/45 C	0-	251 270 270 254 254	55555		 		1 4 1 1 5		1	92A 91D WETHQD	
NO COMPARATIVE METHOD	C-02 C-03 C-05	6 1 1 1			! ! !	! ! !	! ! !	1 1 1 1 1		91C 1-31	

THE COLLEGE OF AMERICAN PATHOLOGISTS HECOMMENDS THAT THE RESULTS OF THIS INTERCARDENCENTS COMPARISON NOT BE USED AS A SOLE CREEPION FOR JUDGING THE PERFORMANCE OF ANY INDIVIDUAL CENTRAL ABOVE THE PROPERTY OF THE PERFORMANCE OF ANY INDIVIDUAL CENTRAL ABOVE THE PERFORMANCE OF ANY INDIVIDUAL ABOVE THE PERFORMANCE OF A SOURCE CENTRAL ABOVE THE PERFORMANCE OF A

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EVALUATION CHEMISTRY-SERIES

SURVEY SET: C3 - A CAP NUMBER: 38988-01-01-01 KIT# 01 ATTENTION: ATTENTION: PENNINGTON BIOMEDICAL RSCH CTR

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3/16/92 5/16/92 PAGE 13 KIT MAILED: QUEST. EVAL:

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CONSTITUENT	ш !	4	ON AND	COMPA	RATIVE	ĮΣ		STATISTICS	<u> </u>	IS OF THE	RELATIVE DIST	1 4	OF YOUR	R RESULTS	LTS
VOUR REPORTED METHOD	SPEC-	C- YOUR E	EVAL	1 2 M	e e	NO.	100	LIMITS OF ACCEPTABILITY	OF ILITY	FROM TARGETS AS PI - 100=LOWER LIMIT	ERCENTAGE OFTAR	1 (		DEVI	ATION LIMIT
GAMMA GLUTAMYL TRANS	C-01   C-02	4	•	60.4	2.4	269	6.0	ļ		3 -	G			e <del> </del>	<b>3</b> ∱—
IU/L BECKMAN SYNCHRON CX4/5 BECKMAN/37 C										910					
NO COMPARATIVE METHOD	C-01 C-02	! ! !	:		!	1			!	910			<del></del> ,	<u></u>	
										918			<del></del>		
LACTATE DEHYDROGENASE IU/L BECKMAN SYNCHRON CX4/5 BECKMAN/37 C	0-01 0-02 0-03 0-05 0-05	323 323 346 346 143		140.2 328.7 148.1 354.8 143.4	5.7 10.5 5.9 11.9	330 330 330 329	7.00 0.00 1.00	112 - 263 - 118 - 283 -	169 178 178 178	92A 91D	212			-	
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LIPASE IU/L BECKMAN SYNCHRON CX4/5 BMD/37 C	0-07	264	00	1		တ တ		! ! ! !		92.A			_	_	-
NO COMPARATIVE METHOD	C-01					1 1 1 1	ē 6 6 6 2	1 1 1 1 1	† 4 5						<del>-</del>
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CHEMISTRY-SERIES 3

EVALUATION

SURVEY SET: C3 - A CAP NUMBER: 38988-01-01-01 KIT# 01 ATTENTION: INSTITUTION: PENNINGTON BIOMEDICAL RSCH CTR

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UNIT OF MEASURE						:		21171	70 00	- FROM	FROM TARGETS	IS AS	PERCE	NTAGES O		LLOWER	ALLOWED DEVIATION	ATION
COMPARATIVE METHOD	SPEC- IMEN	YOUR RESULT	EVAL	MEAN	SD	NO.	SD1	ACCEPT	<b></b>	1	100			D   G	25	ı	75	
POLIPOPROTEIN MG/DL EST NOT PERFOR	LP-01									92 P	,							
NO COMPARATIVE METHOD	LP-01	, , , , ,			1													
APOLIPOPROTEIN B MG/DL TEST NOT PERFORMED	LP-01			! ! ! !		1				95 A						-		-
NO COMPARATIVE METHOD	LP-01				ł ł	 	; ; ;											
CHOLESTEROL L MG/DL ENZYMATIC BECKMAN SYNCHRON CX4/5	LP-01 LP-03 LP-04	234 201 244 168	<u>6</u> 6 6	237.0 196.9 249.0 172.1	0. r. c.	332 332 332 332	4.00	213 177 224 154	261 - 217 - 274 - 190	4 4 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		i				i		
ENZYMATIC ALL MULTICON ANALYZERS	LP-03	1	3 1 1 6	245.8 206.6 193.6 260.6	15.5 13.7 12.3 18.5	5018 5023 5024 5014 5001	8.00 4.00 0.01	1 1 1 2	1 5 6 1 1	<del></del>						·		

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EVALUATION

SURVEY SET C3 - A
CAP NUMBER: 38988-01-01-01 KIT# 01
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CONSTITUENT	EVAL	EVALUATION AND COMPARA	AND	COMPAR	TIVE	METHO		STATISTICS		PLOTS	TS OF		RELATIVE	E DIS	ш	OF YOUR	R RESUL	ULTS
YOUR REPORTED METHOD	7060	٥	. >	1 † 	 		6 8 6 1	LIMITS OF	0 OF	- 100M	FROM TARGETS -100=LOWER L1		PERCE	NTAGES O O=TARGET		ALLOWED DEVIATION +100=UPPER LIMI	LOWED DEVI	ATION LIMIT
	IMEN	- i	CODE	MEAN	SD	LABS	SDI LO	LOWER	UPPER	. 0		-75	 	25 0	25	!	50 75	9
L CHOLESTEROL (L) G/DL x Sul 50,000mw /MG beckman synchron cx4/5	LP-01 LP-02 LP-03 LP-04 LP-05	27 18 30 24	55 <b>55</b>	·		~ ~ 9 ~ ~		7 4 6 6 1		92 ¥	! ! ! !	<del> </del>	; t f f		•	• • • •		^ ! †
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TRIGLYCERIDE (L)  LP MG/DL  ENZ-COLOR W/OGB W/OSB  LF BECKMAN SYNCHRON CX4/5 LF	LP-01 LP-02 LP-03 LP-05	168 145 171 120	13 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	177.2 144.7 178.8 123.2	8.05 8.99 7.88	000000 000000 000000	0.00 8.00 8.4.00	144 - 118 - 149 - 97 -	210 172 209 150	92A	-	-			1	-		
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LDL CHOLESTEROL LP LP MG/DL TRIGLYCERIDE /5	LP-01	173	00	187.7	23.62	2855	- 1 · 0 + 0 · 1	 		92 A	-	-			1		- {	-
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CHEMISTRY-SERIES 3 E V A L U A T I O N

SURVEY SET: C3 - A CAP NUMBER: 38988-01-01-01 KIT# 01 ATTENTION: INSTITUTION: PENNINGTON BIOMEDICAL RSCH CTR

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325 Workegan Road Northleid Imnois 60083-2760 PAGE 18

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UNITYOUR REPORTED WETHOD  CHARARATIVE METHOD  INTERPRETATION  CHARARATIVE METHOD  INTO COMPARATIVE METHOD  INTO COMPARATIVE METHOD  CHARARATIVE METHOD  INTO COMPARATIVE ME	CONSTITUENT	<u> </u>	VALUATI	ON AND	COMPAR	ATIVE.	-METHG	EVALUATION AND COMPARATIVE-METHOD STATISTICS	PLOTS OF THE REL	ATIVED	ISTANC	E OF	YOUR	RESU	15
HOD IMEN RESULT CODE MEAN SD LABS SD1 LOWER UPPER GTR -100 -75 -50 -28 0 25 50 75  C-92 7.1 10 6.99 .25 272 +0.4  S1PLES C-92 6.70 .68 5215 +0.6  S1D  S1B  S1B  S1B  S1B  S1B  S1B  S1B	YOUR REPORTED METHOD			1475	{ 	i i i i		LIMITS OF	-100=LOWER LIMIT	PERCENIA O=1	ARGET	ALLC + 1	00=UF	PER	Z X
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EVALUATION

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College of American Pathologists 328 Walkegan Road North Islands 60083-2750

PAGE 19

DATE: 5/16/92

SURVEY SET: C3 - A CAP NUMBER: 38988-01-01-01 KIT# O1 ATTENTION: INSTITUTION: PENNINGTON BIOMEDICAL RSCH CTR

SUMMARY OF YOUR PERFORMANCE OVER THE LAST THREE	MANCE OVE	R THE LAST THREE		QUARTERS FOR	ANALYTES REGULATED UNDER	UNDER THE 03-14-90 UNIFORM	1	GUIDELINES OF CLIA'67
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EVALUATION

SURVEY SET: FH6 - C
CAP NUMBER: 36988-01-01-01 KIT# 01
ATTENTION:
INSTITUTION: PENNINGTON BIOMEDICAL RSCH CTR

KIT MAILED: 8/26/91 QUEST. EVAL: 10/29/91

PAGE 02

CONSTITUENT		EVALUATION AND COMPARAT	ON NO	COMPA	IVE	-METHOD	STA	TISTIC	S	1 7 2	TS 0F	1 2 5	RELATIVE	VE DIST	ı <b>⋖</b> ∶	6		RESULTS
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COMP. HEMATOLOGY - FH6

EVALUATION

CAP NUMBER: 38988-01-01-01 KIT# 01

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## COMP. HEMATOLOGY - FH6

## EVALUATION

CAP NUMBER: 38988-01-01-01 KIT# 01

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CAP NUMBER: 38988-01-01-01

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NOT ACCEPTABLE

YOUR NEXT SURVEY KIT, SET FH6-D, IS SCHEDULED TO BE SHIPPED ON NOVENBER 26, 1991.

PENNINGTON BIOMEDICAL RSCH CTR CLINICAL RESEARCH LABORATORY 6400 PERKINS RD. BATON ROUGE 

CHECKED BY ... KALLY MONTE REVIEWED ... 11/2/91

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PAGE 01

KIT MAILED: 11/25/91 QUEST. EVAL: 1/28/92

College of American Pathologists 335 Whategan Rose Portnibus Illumos 60093 2730 708/416-8800

COMP. HEMATOLOGY - FH6

EVALUATION

SURVEY SET: FH6 - D
CAP NUMBER: 38988-01-01-01 KIT# 01
ATTENTION:
INSTITUTION: PENNINGTON BIOMEDICAL RSCH CTR

PENNINGTON BIOMEDICAL RSCH CTR CLINICAL RESEARCH LABORATORY 6400 PERKINS RD. LA 70808

1991

COMP. HEMATOLOGY - FH6

EVALUATION

SURVEY SET: FHG - D
CAP NUMBER: 38988-01-01-01 KIT# 01
ATTENTION:
INSTITUTION: PENNINGTON BIOMEDICAL RSCH CTR

College of American Pathologists 125 Warningen Road Northless Manual Section 1975

PAGE 02

KIT MAILED: 11/25/91 QUEST. EVAL: 1/28/92

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EVALUATION

SURVEY SET: FHG - D CAP NUMBER: 38988-01-01-01 KIT# 01

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PAGE 03

CONSTITUENT	<u>E</u>	EVALUATION AND COM	NAN	D COMPAR	ATIVE	-METHOD	•	STATISTICS	CS	- PLOTS	OF THE	RELATIVE S DEDCENT	E DISTANCE	w	OF YOUR RESULTS	R RESC	RESULTS
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College of American Pathologists

PAGE 04

SURVEY SET: FH6 - 0 CAP NUMBER: 38388-01-01-01 KIT# 01

COMP. HEMATOLOGY - FH6

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UNII OF MEASURE YOUR REPORTED METHOD			1479	! ! ! !	; ! !			LIMITS OF	0. OF	-100=LOWER L		PERCE	TAGE #TAR		ALLDWED +100=L	LDWED DEVIATION +100*UPPER LIMIT	ATION
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LTER ST	FH618 FH619 FH620	34.0 33.6 34.1	555	34.48 34.25 34.81	5.50	476 478 475	- <del></del>			910							
COMPARATIVE	FH6 14 FH6 17 FH6 18 FH6 19		i i		 	1 1 1 1	1 1 1 1	1		81 83	, 18 a	······					
RDW/RCMI	FH616 FH617	13.6 6.61	55	13.08	<u>6</u> 6	474	+2.7			9+0							
COULTER STKS	FH618 FH619 FH620	13.9 15.4 15.0	555	13.72 14.99 14.69	. 2 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	469 472 474	+1.0 +1.7 +1.4			5 6			<del> </del>				
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COMP. HEMATOLOGY - FH6

SURVEY SET: FH6 - D CAP NUMBER: 38988-01-01-01 KIT# 01

CONSTITUENT	EV	EVALUATION AND COMP	ON AND		ATIVE	-METHO	STATISTICS	ш	RELATIVE D	NCE	OF YOU	OF YOUR RESULTS	S
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ARATIVE M	IMEN	RESULT	CODE	MEAN	So	LABS	SDI LOWER UPPER	OTR - 100 - 75	-50 -25	0 25	50	75	8
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	FH6 19 FH620	09	55			456 458		910					
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COULTER STKS	FH618	23 26	5 5			469 469							
	FH6 19 FH620	21 28	55			468 472		910					
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	FH619 FH620	1 1 1 1 1		1 1 1									
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	FH619 FH620	a ō	<b>5 5</b>			471		910					
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SURVEY SET: FH6 - D CAP NUMBER: 38988-01-01-01 KIT# 01

EVALUATION

COMP. HEMATOLOGY - FHG

		EVALUATION AND COM	ONA NO	COMPAR	w	STATIS	S OF THE RELATIVE DISTA	OUR RESULTS
YOUR REPORTED METHOD	SPEC-	YOUR		; ! ! !	ON	LIMITS OF	OF AL	EVIAT
COMPARATIVE METHOD	IMEN	RESULT	CODE	MEAN	SD LABS	SOI	-100 -75 -50 -25 0 25	50 75 100
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S	FH6 18 FH6 19 FH6 20	æ±-	555		469 466 433		210	
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BASOPHILS	FH616	- ·	2:	i I I I	456	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	016	
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WHITE CELL 2ND INST THOUSAND/UL	FH616 FH617						010	
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NO COMPARATIVE METHOD	FH616 FH617 FH619 FH619 FH619	1 1 1 1 1	 	! ! !	!		81	

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COMP. HEMATOLOGY - FH6

SURVEY SET: FHG - D CAP NUMBER: 38988-01-01-01 KIT# 01

SPEC- YOUR EVAL IMEN RESULT CODE FH616 FH619 FH	EVALUATION AND COMPARATIVE-METHOD STATISTICS	FROM TARGETS AS PERCENTAGES OF ALLOWED DEVIATION
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FIG 16 FIG 18 FI	:	41R -100 -75 -50 -25 0 25 50 75 100
##6.20 ##6.10 ##6.10 ##6.10 ##6.10 ##6.10 ##6.10 ##6.10 ##6.10 ##6.10 ##6.10 ##6.10 ##6.10		016
FH6 16 FH6 19 FH6 16 FH6 19 FH6 16 FH6 19 FH6 16		216
FH6 16 FH6 13 FH6 19 FH6 19 FH6 14 FH6 19 FH6 16 FH6 16 FH6 16 FH6 16		81.0
FH6 18 FH6 19 FH6 20 FH6 17 FH6 19 FH6 16 FH6 16 FH6 16		Q1-6
FH616 FH618 FH619 FH620 FH616		0.6
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	* E	
2ND INST NOT REPORTED FH618 FH619 FH620		
NO COMPARATIVE METHOD FH616 FH617 FH618 FH619 FH619		<u>a</u>



COMP. HEMATOLOGY - FH6

SURVEY SET: FH6 - D CAF NUMBER: 38988-01-01-01 KIT# 01

CONSTITUENT	EV	EVALUATION AND COMPA	AND		ATIVE	RATIVE-METHOD		STATISTICS		PLOTS OF THE		RELATIVE		. w	OF YOUR RESULTS	RESU	LTS
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	IMEN	_ ;	CODE	MEAN	So	LABS	SDI L	LOWER	UPPER	OTR - 100	x -75	-50		0 25	50	1	<u>\$</u>
MCV 2ND INSTRUMENT FEMTOLITERS	FH616 FH617									910			-			<del></del>	
2ND INST NOT REPORTED	FH6 18 FH6 19 FH6 20									910			<del></del>				
NO COMPARATIVE METHOD	FH6 16 FH6 17 FH6 18 FH6 19 FH6 20	† † † 1 1	,   	7 7 6 9 9	; ! ! !	; ; ; ;	† 6 5 2 3	1 1 1 1 1 1	† 	e. e.		<del></del>			<del></del>		
-	FH616 FH617	 	; ; ; ;	! ! !	1 1 1	1 1 1 1	1 1 1 2 1			9.0						<u> </u>	
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ं 5ुं	FH616 FH617					; †  -  -				910		 		i	1 1 1	; ! ! !	· ——
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COMP. HEMATOLOGY - FH6

SURVEY SET: FH6 - D CAP NUMBER: 38988-01-01-01 KIT# 01

CONSTITUENT		EVALUATION AND COMPA		MATIVE	RATIVE-METHOD	D STATISTICS	S OF THE RELATIVE DISTANCE	OF YOUR RESULTS
YOUR REPORTED METHOD				! !		LIMITS OF	FROM TARGETS AS PERCENTAGES OF AL 100-LOWER LIMIT O-TARGET	ALLOWED DEVIATION +100=UPPER LIMIT
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NO COMPARATIVE METHOD	FH616 FH617 FH619 FH619 FH620						φ. 	
PLATELET COUNT (2ND) THOUSAND/UL 2ND INST NOT REPORTED	FH6 16 FH6 17 FH6 18 FH6 19 FH6 19			! ! ! !			<u>0</u> 0	
NO COMPARATIVE METHOD	FH616 FH617 FH618 FH619 FH620		; † 8 1 1 ¢	; ; t ;	; ; ; ;		82	
T/GRAN RCENT 2ND INS	FH6 16 FH6 17 FH6 19 FH6 19 FH6 19			1   	T 9 9 1 1 1 1		91D	
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SURVEY SET: FH6 - D CAP NUMBER: 38988-01-01-01 KIT# 01

CONSTITUENT		EVALUATION AND COMPA	N AND		ATIVE	RATIVE-METHOD		STATISTICS		PLOT	OF THE		RELATIVE	DISTANCE	w	F YOUR	R RESULT	JLTS
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TAST NOT KENOKIED	FH6 19									910							<del></del>	
NO COMPARATIVE METHOD	FH6 16 FH6 17 FH6 18 FH6 19 FH6 20		; 8 8	1 1	T 6 8 1		; 1 1 1	] ] [ [	1 1 1 1 6 1	8 8 8								
MONDCYTES (2ND INST) PERCENT	FH616 FH617							; ; ; ;	; ; ; ; ; ;	0 to			<del></del>	i ———— 1 1	: : : :	; :		: :
2ND INST NOT REPORTED	FH6 18 FH6 19 FH620									910		<u>.</u>			· <del></del> · · ·	<del></del>	<del></del>	
NO COMPARATIVE METHOD	FH616 FH617 FH618 FH619	5 2 2 5 6 6 6 6 6 8	, , , ,	B 3 1 6 B	* * 1	† 6 6 †	f T E	! ! t t	:	81.0		·		· 	<del> </del>	<del></del>		
EOSINOPHILS (2ND INST)	FH616	1 1 1 1 1 1 2		T 5 1 1			i !	; ; ; ;	• • • • • • • • • • • • • • • • • • •	910		· į ——	-	<u> </u>	·	<u> </u>	· [	· [
2ND INST NOT REPORTED	FH6 19 FH6 19 FH6 20									910							<u>.</u>	
NO COMPARATIVE METHOD	FH616 FH617 FH619	1 2 4 1 1 1 1 2	•	! ! !	1		 	! ! !	! ! !	8 8 8		<u></u>			······································		<del></del>	<del></del>

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SURVEY SET: FHG - D CAP NUMBER: 38988-01-01-01 KIT# 01

COMP. HEMATOLOGY - FH6

CONSTITUENT	E	EVALUATION AND	N AND	COMPARA	COMPARATIVE-METHOD		STATISTICS		PLOTS OF	THE RELA	RELATIVE DISTANC	w	OF YOUR	RESULTS	15
YOUR REPORTED METHOD					 	!	STINITE OF STATES	OF	-100=LOWER LI	<u>,                                    </u>	CENIAG O=TA	. :	ALLUWED DEVIALIUN +100*UPPER LIMI	DEVIAL	LIMIT
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2ND INST NOT REPORTED	FH618 FH619 FH620								910						
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RETICULOCYTE COUNT PERCENT	HE-64				 				910						<del></del>
TEST NOT PERFORMED								<u> </u>	910						
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CONSTITUENT METHODS	SPEC			*** YOUR	RESULT		CODE	3000	D PERFORMANCE	MANCE	ACC	ACCEPTABLE	PERFORMANCE	MANCE	
BLOOD CELL IDENT	HE - 54	₩.	LYM	LYMPHOCYTE	14.4		7.1	LYR	LYMPHOCYTE		LYR	LYMPHOCYTE	REACTIVE	.ve	
. ,	HE - 55	S	* SEG	MENTED	SEGMENTED NEUTROPHIL	PHIL	12	MET	METAMYELOCYTE	<u>.</u>	BAND/ GIANT GIANT	S	TAB/NEUTROPHIL Band Neutrophl Metamyelocyte	HIL PHL 7E	
	HE - 56	ιo	MOM	MONOCYTE				NOM	MONOCYTE		NO.	MONDCYTE, IMMATURE	1 22 A 44 11 15	000	

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COMP. HEMATOLOGY - FHG

SURVEY SET: FHG - D CAP NUMBER: 38988-01-01-01 KIT# 01

EVALUATION

CONSTITUENT	SPEC	**** YOUR RESULT ****	CODE	GOOD PERFORMANCE	CONSTITUENT  METHODS SPEC. **** YOUR RESULT **** CODE GOOD PERFORMANCE ACCEPTABLE PERFORMANCE	
BLOOD CELL IDENT	HE-57	BAND/STAB/NEUTROPHIL	7.1	BAND/STAB/NEUTROPHIL	SEGMENTED NEUTROPHIL	
	HE-58	MYELOCYTE	7.1	MYELOCYTE	METAMYELOCYTE GIANT METAMYELOCYTE	
•	HE-59	BASOPHIL, MATURE	ō	SEE SUMMARY REPORT	SEE SUMMARY REPORT	
	HE-60	PLATELET GIANT MACROTH	01	SEE SUMMARY REPORT	SEE SUMMARY REPORT	
	HE-61	POLYCHROMATOPHILIC BON	0	SEE SUMMARY REPORT	SEE SUMMARY REPORT	
	HE-62	MEGAKARYOCYTE/PRECURSR	0	SEE SUMMARY REPORT	SEE SUMMARY REPORT	
	HE - 63	EPITHELIAL/ENDOTHELIAL	<b>9</b>	SEE SUMMARY REPORT	SEE SUMMARY REPORT	

\* NOT ACCEPTABLE

IF YOU HAVE SUBMITTED YOUR 1892 ORDER, YOUR NEXT COMPREHENSIVE HEMATOLOGY-FLOW THROUGH DIFFERENTIAL SURVEY KIT, SET FHG-A, IS SCHEDULED TO BE SHIPPED ON FEBRUARY 25, 1992.

PENNINGTON BIOMEDICAL RSCH CTR CLINICAL RESEARCH LABORATORY 6400 PERKINS RD. LA 70808 BATON ROUGE LA 70808

CHECKED BY ... X

DATE REVIEWED 3/17/91

- FH6 z o

EVALUATI COMP. HEMATOLOGY

SURVEY SET: FH6 - A
CAP NUMBER: 38988-01-01-01 KIT# 01
ATTENTION:
INSTITUTION: PENNINGTON BIOMEDICAL RSCH CTR

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PAGE 01

2/25/92 4/19/92 KIT MAILED: QUEST. EVAL:

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EVALUATION

SURVEY SET: FH6 - A
CAP NUMBER: 38988-01-01-01 KIT# 01
ATTENTION:
INSTITUTION: PENNINGTON BIOMEDICAL RSCH CTR

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PAGE 02

2/25/92 4/19/92

KIT MAILED: QUEST. EVAL:

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- YOUR EVAL NO. ACCEPTABILITY - RESULT CODE MEAN SD LABS SDI LOWER UPPER 3.5 13 3.44 .12 751 +0.5 3.0 - 3.8 8.1 13 8.14 .20 754 -0.2 7.5 - 8.8 8.1 13 8.16 .20 747 -0.3 7.5 - 8.8	12.1 13 12.29 .26 750 -0.7 11.5 - 13 24.2 13 24.56 .53 747 -0.7 22.9 - 26	1601     5.18     13     5.224     .068     754     -0.6     5.02     -     5.43     92A       1602     4.73     13     4.703     .060     752     +0.5     4.52     -     4.89       1603     4.34     13     4.323     .058     751     +0.3     4.14     -     4.50       1604     3.53     13     3.479     .047     755     +1.1     3.33     -     3.62       1605     2.17     13     2.163     .029     751     +0.2     2.07     -     2.25	4601 4602 4603 4604 91B	15.1 13 15.17 .17 752 -0.4 14.6 - 15.7 13.6 13 13.66 .15 748 -0.4 13.2 - 14.2 12.6 13 12.59 .14 749 +0.1 12.1 - 13.1 10.2 13 10.23 .12 747 -0.3 9.8 - 10.6 6.6 13 6.58 .13 754 +0.2 6.1 - 7.0
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LOWER LOWER 3.0	· • •	1		466906
SDI 0.5	7.00.	0 + + + + + + + + + + + + + + + + + + +	; ; ;	44-64
NO. LABS 	:	754 752 751 751		752 748 749 747
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MEAN 3.44 8.14	12.29	5.224 4.703 4.323 3.479 2.163		
EVAL CODE 13				
YOUR YOUR SESULT	24.2	81.48 4.73 81.33 2.53 7.17		13.0 10.0 10.0 10.0 10.0 10.0
SPEC- IMEN ITHEO1 FH601 FH602	FH604 FH605 FH601 FH603 FH604 FH605	FH601 FH602 FH603 FH604 FH605	;	FH601 FH602 FH603 FH604 FH605

THE COLEGE OF AMERICAN PATHOLOGISTS RECOMMENDS THAT THE RESULTS OF THIS INTERLABORATORY COMPARISON NOT BE USED AS A SOLE CRITERION FOR JIDGING THE PERFORMANCE OF ANY INDIVIDIAL CLINICAL LARORATORY

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COMP. HEMATOLOGY EVALUAT

SURVEY SET: FHG - A CAP NUMBER: 38988-01-01-01 KIT# 01

1992

PAGE 03

+100=UPPER LIMIT 8 PLOTS OF THE RELATIVE DISTANCE OF YOUR RESULTS FROM TARGETS AS PERCENTAGES OF ALLOWED DEVIATION +100=LOWER LIMIT O\*TARGET +100=UPPER LIMI S 25 0 7----25 -50 QTR -100 -75 92A 45.9 40.9 37.5 30.0 ACCEPTABILITY LOWER UPPER LIMITS OF EVALUATION AND COMPARATIVE-METHOD STATISTICS LOWER 41.7 34.1 27.2 17.0 20000 SDI NO. LABS 755 751 749 754 755 .55 .55 .30 LOUISIANA S MEAN 43.82 39.12 35.77 28.60 COPIES SENT TO: EVAL £ £ £ £ £ RESULT 43.0 39.1 35.7 28.8 17.9 YOUR SPEC-IMEN FH601 FH602 FH603 FH604 FH605 YOUR REPORTED METHOD COMPARATIVE METHOD UNIT OF MEASURE COULTER STKS CONSTITUENT HEMATOCRIT PERCENT

121-

910

9 1C

FH601 FH602 FH603

NO COMPARATIVE METHOD

FH604 FH605

918

**92A** 

910

2.0000

751 752 750 751

83.81 83.13 82.69 82.14 82.97

55555

83.0 82.7 82.7 81.6 82.4

FH601 FH602 FH603

FEMTOLITERS
COULTER STKS

FH604 FH605

131

NO COMPARATIVE METHOD	FH601 FH602							910		
	FH603 FH604 FH605	8 3 8 8 4	   1   1   1	) () () () ()	} ! ! !	) } ! !	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	- 6 B 18	 	
RDW/RCMI	FH601	16.3		15.97	.25		6.1	92A		
COULTER STKS	FH602 FH603 FH605	6.6 6.6 6.6 7.6 7.6 7.6 7.6 7.6 7.6 7.6	5555	16.20 16.15 16.19	25. 25. 25. 25. 25. 25. 25. 25. 25. 25.	745 746 743 746	0 0 0 0	910		
NO COMPARATIVE METHOD	FH601 FH602 FH603 FH604 FH608	! ! ! !	1 1	† ; ; ; ; ;	: : :	! ! !	1 t t t t t t t t t t t t t t t t t t t	910 818	 	

THE COLIGE OF AMERICAN PATHOLOGISTS RECOMMENTS THAT THE RESILITS OF THIS INTERLABORATORY COMPARISON NOT BE USED AS A SOLE CRITERION FOR JUDGING THE PERFORMANCE OF ANY INDIVIDIAL CHINCAL LARGEARISON

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COMP. HEMATOLOGY - FH6 EVALUATION

SURVEY SET: FH6 - A CAP NUMBER: 38988-01-01-01 KIT# 01

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CONSTITUENT		EVALUATION AND	NA		COMPARATIVE-METHOD	E-MET		STATISTICS	ıcs		_	OF THE	RE	RELATIVE	•	۰;	F YOUR	RESUL	LTS
YOUR REPORTED METHOD				1 	, } ! ! ! !		} ; ; ; ; ;		LIMITS		50	-	S AS PELIMIT	PERCENIAGES OFTARG	w	r AL	+100 UPPER	DEVIAT	
ARATIVE ME	IMEN	RESULT	CODE	MEAN	S	LAB.	S SDI	1	4	PER	OTR - 100	0 -75	-50	-25	0	25	င္ဟ	75	<u>\$</u>
PLT CT-WHOLE BLOOD THOUSAND/UL COULTER STKS	FH601 FH602 FH603 FH604	484 89 74 285	<u> </u>	503.6 87.7 76.2 286.9	5.6 6.6 6.4 6.4	750 754 750 748	-000	451 77 66 255			92A 910			-15					·
	FH605	495	13	494.5		752	:	-	2	547				ļ <del></del>				<u></u>	<del></del>
NO COMPARATIVE METHOD	FH603 FH603 FH604	1 0 1 1	1	8 8 1 1 3	; ; ;	; ; ;	1 4 1	; ; ; ;	1 1		2 B		÷		5		<del></del>		<del></del> !
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COMP. HEMATOLOGY - FH6

SURVEY SET.: FHG - A CAP NUMBER: 38988-01-01-01 KIT# 01

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CONSTITUENT	1 † 	EVALUATION AND	ON AND		ATIVE	-MET		STATISTICS	PLOT	DTS OF	w	RELATIVE		DISTANCE	ıw	YOUR	RE SUL T	1s
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COMP. HEMATOLOGY - FH6

EVALUATION

SURVEY SET: FH6 - A CAP NUMBER: 38988-01-01-01 KIT# 01

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CONSTITUENT	Ē	EVALUATION AND	ON AND	COMPARATIVE-METHOD	ATIVE-	METHOC	STATISTICS	T1CS	PLOTS	S OF THE		RELATIVE		CE OF Y	YOUR	RESUL.	TS
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COMP. HEMATOLOGY - FH6

EVALUATION

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CONSTITUENT UNIT OF MEASURE	<b>4</b>	EVALUATION AND	U CUMPAKAIIVE					FROM TARGETS	SAS	TENT OF	1	4			DEVIATION
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COMP. HEMATOLOGY - FH6 EVALUATION

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		THE RELATIVE DISTANCE OF YOUR	
YOUR REPORTED METHOD	SPEC- YOUR EVAL NO. ACCEPTABILITY IMEN RESULT CODE MEAN SO LABS SDI LOWER UPPER	-100=LDWER LIMIT 0*TARGET +100*UPPER QTR -100 -75 -50 -25 0 25 50 75	100
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NO COMPARATIVE METHOD	FH601 FH602	Ü- 6	
	FH603 FH604 FH605	81.0	

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SURVEY SET: FHG - A CAP NUMBER: 38988-01-01-01 KIT# 01

COMP.HEMATOLOGY - FHG E V A L U A T I O N

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PAGE 10

SURVEY SET: FH6 - A CAP NUMBER: 38988-01-01-01 KIT# 01

COMP. HEMATOLOGY - FH6

CONSTITUENT METHODS SPEC. **** YOUR	SPEC.	**** YOUR RESULT ***	CODE	CODE GOOD PERFORMANCE	ACCEPTABLE PERFORMANCE
BLOOD CELL IDENT	90-3H	MYELOCYTE	72	SEE SUMMARY REPORT	SEE SUMMARY REPORT
	HE-07	SPHEROCYTE	7.1	SPHEROCYTE	
	HE-08	FRAGMENTED CELL	7.1	FRAGMENTED CELL	
	HE -09	MONDCYTE	7.1	MONOCYTE	MONDCYTE, IMMATURE PRO
	HE-10	POLYCHROMATOPHILIC RC	7.1	POLYCHROMATOPHILIC RC	
	HE - 11	TEST NOT PERF. IN LAB.	0	SEE SUMMARY REPORT	SEE SUMMARY REPORT
	HE - 12	TEST NOT PERF. IN LAB.	0	SEE SUMMARY REPORT	SEE SUMMARY REPORT
	HE-13	TEST NOT PERF. IN LAB.	0	SEE SUMMARY REPORT	SEE SUMMARY REPORT
	HE - 14	TEST NOT PERF. IN LAB.	ō	SEE SUMMARY REPORT	SEE SUMMARY REPORT
	HE-15	TEST NOT PERF. IN LAB.	5	SEE SUMMARY REPORT	SEE SUMMARY REPORT

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EVALUATION

COMP. HEMATOLOGY - FH6

SURVEY SET: FHG - A CAP NUMBER: 38988-01-01-01 KIT# 01

DATE: 4/19/92

SUMMARY OF YOUR PERFORMANCE OVER THE LAST THREE	RMANCE OVER			ERS FOR A	INALYTES REGULATE	D UNDER	THE 03-14	1 06-	INIFORM PT GUIDE	QUARTERS FOR ANALYTES REGULATED UNDER THE 03-14-90 UNIFORM PT GUIDELINES OF CLIA'67
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COMP. HEMATOLOGY - FH6

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PAGE 12

4/19/92

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DATE:

YOUR NEXT SURVEY KIT, SET FHG-B, IS SCHEDULED TO BE SHIPPED ON MAY 19, 1992.

PENNINGTON BIOMEDICAL RSCH CTR CLINICAL RESEARCH LABORATORY 6400 PERKINS RD. LA 70808 BATON ROUGE

DATE REVIEWED ... ff. 2.4/ CHECKED BY .. A .............

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CAP

E

THE COLEGE OF AMERICAN PATHOLOGISTS RECOMMENDS THAT THE RESULTS OF THIS INTERLABORATORY COMPARISON NOT BF USED AS A SOLE CRITERION FOR JUDGING THE PERFORMANCE OF ANY INDIVIDUAL CLINICAL LABORATORY

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PAGE 01

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FH6 ı COMP. HEMATOLOGY

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PLOTS OF THE RELATIVE DISTANCE OF YOUR RESULTS FROM TARGETS AS PERCENTAGES OF ALLOWED DEVIATION -100\*LOWER LIMIT O\*TARGET +100\*UPPER LIMIT <u>5</u> 75 2111 80 25 11--1-1 -17-1111 1---11------25 -50 QTR -100 -75 **92**A 910 910 928 **92**A 9 10 9 1 **928 92**A 0.00 + 1.00 4.91 3.84 3.71 2.07 ACCEPTABILITY UPPER 2.4.1 2.7.0 5.0 6.3 LIMITS OF EVALUATION AND COMPARATIVE-METHOD STATISTICS LOWER 6.1 7.2 9.8 18.9 5 9.9 9.3 0 4.05 3.53 3.41 1.90 SDI 1000 +1.9 1 + + + 0 4 0 0 NO. Labs 803 803 807 804 809 809 808 809 802 803 803 803 804 804 .056 .056 .050 .047 SD 4.50 6.72 7.74 10.61 20.21 MEAN 4.720 4.221 3.683 3.560 1.986 13.73 12.19 11.26 10.29 5.88 CODE 00000 8 9 9 9 9 4.6 6.6 7.7 19.8 RESULT 4.80 4.30 3.77 2.03 4.0 6.0 6.0 YOUR SPEC-IMEN FH608 FH609 FH610 FH606 FH607 FH608 FH609 FH610 FH608 FH609 FH610 FH606 FH607 FH606 FH607 FH606 FH607 FH606 FH607 FH608 FH609 FH608 FH609 FH6 10 .He 10 COMPARATIVE METHOD NO COMPARATIVE METHOD YOUR REPORTED METHOD WHITE BLOOD CELL COUNT COMPARATIVE METHOD RED CELL COUNT (FH) UNIT OF MEASURE COULTER STKS COULTER STKS COULTER STKS THOUSAND/UL CONSTITUENT MILLION/UL HEMOGLOBIN 2 <u>6/0</u>

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ALL INSTRUMENTS

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- FH6 COMP. HEMATOLOGY EVALUATION

SURVEY SET: FH6 - B
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CONSTITUTION MEASURE YOUR REPORTED METHOD	) : U	<u> </u>	Z I	COMPARALIVE ME INCO			1	LIMITS	TS OF		GETS AS	PERCENTAGES OF O TARGET		+ 100	<u>ت</u> ت	EVIATION PER LIMIT
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- FH6

COMP. HEMATOLOGY

EVALUATION

SURVEY SET: FH6 - B
CAP NUMBER: 38988-01-01-01 KIT# 01
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CONSTITUENT	EV		IN ANC	COMPA		-METH		STATISTICS		PLOTS OF THE		/E U131	•	OF YOUR	RESULT	TS
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COMP. HEMATOLOGY - FH6 EVALUATION

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CAP NUMBER: 38988-01-01-01 KIT# O1
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- FH6

COMP. HEMATOLOGY

EVALUATION

SURVEY SET: FH6 - B
CAP NUMBER: 38988-01-01-01 KIT# 01
ATTENTION:
INSTITUTION: PENNINGTON BIOMEDICAL RSCH CTR

College of American Pathologists 325 Waukegan Road Northfield, Minols 60083-2750 800/323-4040

PAGE OF

5/19/927/11/92 KIT MAILED: QUEST. EVAL:

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College of American Pathologists

PAGE 07

5/19/92 7/11/92 KIT MAILED: QUEST. EVAL:

COMP. HEMATOLOGY - FH6 EVALUATION

SURVEY SET: FH6 - B
CAP NUMBER: 38988-01-01-01 KIT# 01
ATTENTION:
INSTITUTION: PENNINGTON BIOMEDICAL RSCH CTR

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CONSTITUENT	EVALUATION AND COMP		RATIVE	ARATIVE-METHOD	DD STATISTICS	iΞι		TIVE D	NCE	0F Y	YOUR RESUL	ULTS
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COMP. HEMATOLOGY - FH6 EVALUATION

SURVEY SET: FH6 - B
CAP NUMBER: 38988-01-01-01 KIT# 01
ATTENTION:
INSTITUTION: PENNINGTON BIOMEDICAL RSCH CTR

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5/19/92 7/11/92 PAGE 08 KIT MAILED: QUEST. EVAL:

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CONSTITUENT		EVALUATION	AND		E - ME		STATISTICS	RELATIVE DISTANCE	YOUR RESULTS
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COMP. HEMATOLOGY - FH6 EVALUATION

SURVEY SET: FH6 - B
CAP NUMBER: 38988-01-01-01 KIT# 01
ATTENTION:
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5/19/92 7/11/92 KIT MAILED: QUEST. EVAL:

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CONSTITUENT		VALUATI	ON AND	EVALUATION AND COMPARATIVE-METHOD	ATIVE-M	ETHOD	STATISTICS	PLOTS OF THE	THE RE	LATIVE	RELATIVE DISTANCE	ı w	YOUR R	RESULTS	
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PAGE 10

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5/19/92 7/11/92

SURVEY SET: FH6 - B
CAP NUMBER: 38988-01-01-01 KIT# 01
ATTENTION:
INSTITUTION: PENNINGTON BIOMEDICAL RSCH CTR

COMP. HEMATOLOGY - FH6 EVALUATION

CONSTITUENT	SPEC.	**** YOUR RESULT ***	CODE	GOOD PERFORMANCE	ACCEPTABLE PERFORMANCE
BLOOD CELL IDENT	HE-21	BAND/STAB/NEUTROPHIL	7.1	BAND/STAB/NEUTROPHIL	SEGMENTED NEUTROPHIL
	HE-22	EOSINOPHIL, ANY STAGE	1.1	EOSINOPHIL, ANY STAGE	
	HE-23	SPHEROCYTE	1.1	SPHEROCYTE	
	HE-24	MONDCYTE	11	MONDCYTE, IMMATURE PRO	BAND/STAB/NEUTROPHIL GIANT BAND NEUTROPHL
	HE-25	BASOPHIL, MATURE	7.1	BASOPHIL, MATURE	
	HE - 26	TEST NOT PERF. IN LAB.	5	SEE SUMMARY REPORT	SEE SUMMARY REPORT
	HE-27	TEST NOT PERF. IN LAB.	ç	SEE SUMMARY REPORT	SEE SUMMARY REPORT
	HE-28	TEST NOT PERF. IN LAB.	õ	SEE SUMMARY REPORT	SEE SUMMARY REPORT
	HE - 29	TEST NOT PERF. IN LAB.	5	SEE SUMMARY REPORT	SEE SUMMARY REPORT
	HE -30	TEST NOT PERF. IN LAB.	ō	SEE SUMMARY REPORT	SEE SUMMARY REPORT
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COMP. HEMATOLOGY

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College of American Pathologists
323 Waukagan Road Northield, Winols 80083-2780
800323-4040

PAGE 11

DATE: 7/11/92

SURVEY SET: FH6 - B
CAP NUMBER: 38988-01-01-01 KIT# 01
ATTENTION:
INSTITUTION: PENNINGTON BIOMEDICAL RSCH CTR

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- FH6 COMP. HEMATOLOGY

EVALUATION

SURVEY SET: FM6 - B
CAP NUMBER: 38988-01-01-01 KIT# 01
ATTENTION:
INSTITUTION: PENNINGTON BIOMEDICAL RSCH CTR

PAGE 12

DATE: 7/11/92

College of American Pathologists

325 Wautegan Road NortWield, Minois 60083-2750 800/323-4040

YOUR NEXT SURVEY KIT, SET FH6-C, IS SCHEDULED TO BE SHIPPED ON AUGUST 25, 1992.

PENNINGTON BIOMEDICAL RSCH CTR CLINICAL RESEARCH LABORATORY 6400 PERKINS RD. LA 70808 BATON ROUGE

CHECKED BY MY

DATE REVIEWED 7/24/92

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CHEMISTRY-SERIES 3 EVALUATION

SURVEY SET: C3 - A CAP NUMBER: 38988-01-01-01 KIT# 01 ATTENTION: INSTITUTION: PENNINGTON BIOMEDICAL RSCH CTR

PAGE 16

KIT MAILED: , 3/16/92 QUEST. EVAL: 5/16/92

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CONSTITUENT	EVALUA	EVALUATION AND		COMPARATIVE-METHOD	TIVE-M	-METHOD	STATISTICS	- PL(	PLOTS OF THE	HE REL	RELATIVE DISTANCE	DISTAN		OF YOUR RESULTS	RESULTS	S
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College of American Pathologists
323 Wastegan Nord NortWield, Winds 80083-2750

PAGE, 17

3/16/92 5/16/92 KIT MAILED: QUEST, EVAL:

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THE OF MEASURE  YOUR REPORTED METHOD  SPEC. YOUR EVAL  COMPARATIVE METHOD  TATE DEHYDROGENASE  TATE DEHYDROGENASE  TE-01  SECKMAN/37 C  SECKMAN/37 C  TE-01  SECKMAN/37 C  TE-01  TE-01  TE-01  TE-02  TE-03  TE-03  TE-03  TE-04  TE-03  TE-04  TE-04  TE-05	•	PLOTS OF THE RELATIVE	E 0F	YOUR RESULTS	
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CLINICAL MICROSCOPY

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SURVEY SET: CM - B
CAP NUMBER: 38988-01-01-01 KIT# 01
ATTENTION:
INSTITUTION: PENNINGTON BIOMEDICAL RSCH CTR

KIT MAILED: QUEST. EVAL:

7/08/91 9/22/91

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CLINICAL MICROSCOPY 1991

EVALUATION

SURVEY SET: CM - B CAP NUMBER: 38988-01-01-01 KIT# 01 ATTENTION: INSTITUTION: PENNINGTON BIOMEDICAL RSCH CTR

PAGE 02

7/08/91 KIT MAILED: QUEST. EVAL:

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DSMOLALITY-URINE MOSM/KG H20 TEST NOT PERFORMED CM-11 CM-12 CM-13 CM-14 CM-15	DSW/KG H20 CW-11 CW-12 CW-13 CW-14		00000					ADVANCED INSTRUMENT	LMENTS	24.0 4.24.0 16.0.2 46.0.2	0 k m m 4	1224 1224 1226 1220 1220	00000
PROTEIN QUANT. URINE MG Test not performed	MG/DL CN-12 CN-12 CN-13 CN-14 CN-14		00000					NO COMPARATIVE	METHOD				
SIMULATED BODY FLUID UL TEST NOT PERFORMED	CM-16		10		:	:		NO COMPARATIVE	METHOD				•
CONSTITUENT	S I			YOUR RESUL		CODE		GOOD PERFORMANC	U U	ACCEPT	ABLE	PERFORMANCE	
PH IN URINE AMES-CLINITEK	CM-11		8.0 OR MORE	MORE		<b>6</b>	: : : • :	7.0 7.5 8.0 OR MORE					ga <b>t</b> e.
	CM-12		6.5	;	:	61	:	6.0 7.0					

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CLINICAL MICROSCOPY

CAP NUMBER: 38988-01-01-01 KIT# 01

EVALUATION

CONSTITUENT	SPEC.		CODE	GOOD PERFORMANCE	ACCEPTABLE PERFORMANCE
HA IN CRINE	E - 740	8.0 OR MORE	6.1	7.0 7.5 8.0 OR MORE	
	CM-14	8.0 OR MORE	61	7.0 7.5 8.0 OR MORE	
	CM-15	8.0 OR MORE	61 61 61 61 61 61 61 61 61	7.0 7.5 8.0 OR MORE	
PROTEIN QUAL, URINE AMES-CLINITEK	CM-11	NEGATIVE		NEBATIVE	
	CM-12	30 MG/DL (1+)		30 MG/DL (1+)	TRACE 100 MG/DL (2+) 300-500 MG/DL (3+) 1000 MG/DL(4+)OR MORE
:	CM-13	NEGATIVE	. 61	NEGATIVE	
	CH-14	30 MG/DL (1+)	<b>.</b>	30 MG/DL (1+)	TRACE 100 MG/DL (2+) 300-500 MG/DL (3+) 1000 MG/DL(4+) OR MORE
	CW-15	300~500 MG/DL (3+	)+}	300-500 MG/DL (3+)	TRACE 30 MG/DL (1+) 100 MG/DL (2+) 1000 MG/DL(4+)OR MORE
GLUCOSE REDUC SUB-UR AMES-CLINITEK	CM-11	100 MG/DL	62	SEE SUMMARY REPORT	SEE SUMMARY REPORT
	CM-12	500 MG/DL	61	500 MG/DL	MG/DL MG/DL MG/DL
			•		
	CM-13	100 MG/DL	62	SEE SUMMARY REPORT	SEE SUMMARY REPORT
	CM~14	NEGATIVE		NEGATIVE	

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CLINICAL MICROSCOPY

EVALUATION

CAP NUMBER: 38988-01-01-01 KIT# 01

UG SUB-UR  CM-15  NEGATIVE  CM-12  NEGATIVE  CM-12  NEGATIVE  CM-12  NEGATIVE  CM-12  NEGATIVE  CM-13  CM-12  NEGATIVE  CM-13  CM-12  NEGATIVE  CM-13  CM-14  CM-12  NEGATIVE  CM-13  CM-14  CM-14  CM-15  CM-15  CM-15  CM-17  CM-17  CM-17  CM-17  CM-18  CM-11  NEGATIVE  CM-11  NEGATIVE  CM-11  NEGATIVE  CM-11  NEGATIVE  CM-12  NEGATIVE  CM-13  NEGATIVE  CM-13  NEGATIVE  CM-14  NEGATIVE  CM-13  NEGATIVE  CM-13  NEGATIVE  CM-14  NEGATIVE  CM-15  NEGATIVE  CM-17  NEGATIVE  CM-17  NEGATIVE  CM-18  NEGATIVE  CM-19  NEGATIVE  CM-19  NEGATIVE  CM-19  NEGATIVE  CM-11  NEGATIVE  CM-11  NEGATIVE  CM-11  NEGATIVE  CM-13  NEGATIVE  CM-13  NEGATIVE  CM-13  NEGATIVE  CM-14  NEGATIVE  CM-13  NEGATIVE  CM-14  NEGATIVE  CM-15  NEGATIVE  CM-15  NEGATIVE  CM-16  NEGATIVE  CM-17  NEGATIVE  CM-18  NEGATIVE  CM-18  NEGATIVE  CM-19  NEGATIVE  CM-19  NEGATIVE  CM-10  NE						
SUB-UR	:	SPEC.	**** YOUR RESULT ***	CODE	GOOD PERFORMANCE	ACCEPIABLE PERFURMANCE
CM-12   NEGATIVE   61   LARGE (3+)   MODERAL	GLUCOSE REDUC SUB-UR	CM-15	NEGATIVE	61	NEGATIVE	
CM-12 NEGATIVE 61 NEGATIVE  CM-13 LARGE (3+) 61 LARGE (3+) MODERA  CM-14 LARGE (3+) 61 LARGE (3+) SMALL  CM-15 LARGE (3+) 61 LARGE (3+) SMALL  CM-11 NEGATIVE  CM-12 NEGATIVE  CM-13 NEGATIVE  CM-14 TRACE (SMALL OR 1+) 62 SEE SUMMARY REPORT SEE SU  CM-15 POSITIVE (MOD OR 7+) 62 SEE SUMMARY REPORT SEE SU  CM-12 NEGATIVE  CM-12 NEGATIVE  CM-13 POSITIVE (50 ERY/UL) 61 NEGATIVE  CM-14 TRACE (5-10 ERY/UL) 61 NEGATIVE  CM-15 POSITIVE (50 ERY/UL) 61 NEGATIVE  CM-14 TRACE (5-10 ERY/UL) 61 NEGATIVE  CM-15 NEGATIVE  CM-14 TRACE (5-10 ERY/UL) 61 NEGATIVE  CM-15 SEE SUMMARY REPORT SEE SU  MARKED POSITIVE (50 ERY/UL) 61 NEGATIVE  CM-14 TRACE (5-10 ERY/UL) 61 NEGATIVE  CM-15 NEGATIVE  CM-15 NEGATIVE  CM-17 NEGATIVE  CM-17 NEGATIVE  CM-18 SEE SUMMARY REPORT SEE SU  MARKED POSITIVE (50 ERY/UL) 61 NEGATIVE  CM-14 TRACE (5-10 ERY/UL) 61 NEGATIVE  CM-15 NEGATIVE  CM-16 NEGATIVE  CM-17 NEGATIVE  CM-17 NEGATIVE  CM-18 NEGATIVE  CM-19 NEGATIVE  CM-19 NEGATIVE  CM-19 NEGATIVE  CM-10 NEGATIVE  CM-11 NEGATIVE  CM-11 NEGATIVE  CM-11 NEGATIVE  CM-12 NEGATIVE  CM-13 NEGATIVE  CM-14 NEGATIVE  CM-15 NEGATIVE  CM-16 NEGATIVE  CM-17 NEGATIVE  CM-17 NEGATIVE  CM-18 NEGATIVE  CM-19 NEGATIVE  CM-19 NEGATIVE  CM-19 NEGATIVE  CM-10 N	KETONES-URINE AMES-CLINITEK	CM-11	LARGE (3+)	61	LARGE (3+)	SMALL (1+) Moderate (2+)
CM-13	•	CM-12	NEGATIVE	61	NEGATIVE	
CM-14 LARGE (3+) 61 LARGE (3+) MODERA  CM-15 LARGE (3+) 61 LARGE (3+) MODERA  CM-11 NEGATIVE  CM-12 NEGATIVE  CM-13 NEGATIVE  CM-14 TRACE (SMALL OR 1+) 62 SEE SUMMARY REPORT SEE SU  CM-15 POSITIVE (MOD OR 2+) 62 SEE SUMMARY REPORT SEE SU  CM-15 POSITIVE (MOD OR 2+) 62 SEE SUMMARY REPORT SEE SU  CM-15 POSITIVE (50 ERY/UL) 61 MARKED POSITIVE (250)  CM-12 NEGATIVE  CM-13 POSITIVE (50 ERY/UL) 61 NEGATIVE  CM-14 TRACE (5-10 ERY/UL) 61 MARKED POSITIVE (250)  CM-14 TRACE (5-10 ERY/UL) 61 TRACE (5-10 ERY/UL)  CM-15 NEGATIVE  CM-15 NEGATIVE  CM-11 NEGATIVE  CM-11 RAGE (5-10 ERY/UL) 61 NEGATIVE  CM-11 NEGATIV		CM-13	LARGE (3+)	61	LARGE (3+)	SMALL (1+) MODERATE (2+)
CM-15 LARGE (3+) 61 LARGE (3+) MGGERA  CM-11 NEGATIVE 61 NEGATIVE  CM-12 NEGATIVE  CM-12 NEGATIVE  CM-13 NEGATIVE  CM-14 TRACE (SMALL OR 1+) 62 SEE SUMMARY REPORT SEE SU  CM-15 POSITIVE (MOD OR 2+) 62 SEE SUMMARY REPORT SEE SU  CM-15 POSITIVE (MOD OR 2+) 62 SEE SUMMARY REPORT SEE SU  CM-15 POSITIVE (50 ERY/UL) 61 NEGATIVE  CM-12 NEGATIVE  CM-13 NEGATIVE  CM-14 TRACE (5-10 ERY/UL) 61 NARKED POSITIVE (250)  CM-15 NEGATIVE  CM-15 NEGATIVE  CM-15 NEGATIVE  CM-15 NEGATIVE  CM-17 NEGATIVE  CM-18 NEGATIVE  CM-19 NEGATIVE  SEE SUMMARY REPORT SEE SU		CM-14	LARGE (3+)	61	LARGE (3+)	SMALL (1+) MODERATE (2+)
CM-11         NEGATIVE         61         NEGATIVE           CM-12         NEGATIVE         61         NEGATIVE           CM-13         NEGATIVE         61         NEGATIVE           CM-14         TRACE (SMALL OR 1+)         62         SEE SUMMARY REPORT           CM-15         POSITIVE (MOD OR 2+)         62         SEE SUMMARY REPORT           CM-15         POSITIVE (SO ERY/UL)         61         POSITIVE (250)           CM-12         NEGATIVE         61         NEGATIVE           CM-12         NEGATIVE         61         NEGATIVE (250)           CM-13         POSITIVE (50 ERY/UL)         61         NEGATIVE (250)           CM-14         TRACE (5-10 ERY/UL)         61         NEGATIVE (250)           CM-15         NEGATIVE         61         POSITIVE (50 ERY/UL)           CM-15         NEGATIVE         61         POSITIVE (50 ERY/UL)           CM-15         NEGATIVE         61         NEGATIVE (50 ERY/UL)		CW-15	LARGE (3+)	19	LARGE (3+)	SMALL (1+) KODERATE (2+)
CM-12         NEGATIVE         61         NEGATIVE           CM-13         NEGATIVE         61         NEGATIVE           CM-14         TRACE (SMALL OR 1+)         62         SEE SUMMARY REPORT           CM-15         POSITIVE (MOD OR 2+)         62         SEE SUMMARY REPORT           CM-15         POSITIVE (MOD OR 2+)         62         SEE SUMMARY REPORT         SEE SU           CM-11         POSITIVE (50 ERY/UL)         61         NEGATIVE (250)         TRACE           CM-12         NEGATIVE (50 ERY/UL)         61         NEGATIVE (250)         TRACE           CM-14         TRACE (5-10 ERY/UL)         61         POSITIVE (50 ERY/UL)         POSITIVE (50 ERY/UL)           CM-14         TRACE (5-10 ERY/UL)         61         POSITIVE (50 ERY/UL)         REY/UL)           CM-15         NEGATIVE         62         SEE SUMMARY REPORT         SEE SU	BILIRUBIN, URINE AMES-CLINITEK	CM-11	NEGATIVE	61	NEGATIVE	
CM-13         NEGATIVE         61         NEGATIVF           CM-14         TRACE (SMALL OR 1+)         62         SEE SUMMARY REPORT         SEE SU           CM-15         POSITIVE (MOD OR 2+)         62         SEE SUMMARY REPORT         SEE SU           CM-15         POSITIVE (50 ERY/UL)         61         POSITIVE (250)         TRACE           CM-13         POSITIVE (50 ERY/UL)         61         NEGATIVE (250)         TRACE           CM-14         TRACE (5-10 ERY/UL)         61         POSITIVE (250)         TRACE           CM-14         TRACE (5-10 ERY/UL)         61         TRACE (5-10 ERY/UL)         MARKED           CM-15         NEGATIVE         62         SEE SUMMARY REPORT         SEE SU		CM-12	NEGATIVE	61	NEGATIVE	
CM-14         TRACE (SMALL OR 1+)         62         SEE SUMMARY REPORT         SEE SU           CM-15         POSITIVE (MOD OR 2+)         62         SEE SUMMARY REPORT         SEE SU           CM-11         POSITIVE (SO ERY/UL)         61         POSITIVE (250)         TRACE           CM-12         NEGATIVE         61         POSITIVE (SO ERY/UL)         FRACE         TRACE           CM-14         TRACE (5-10 ERY/UL)         61         FRACE (5-10 ERY/UL)         MARKED         POSITIVE (250)           CM-14         TRACE (5-10 ERY/UL)         61         FRACE (5-10 ERY/UL)         MARKED           CM-14         TRACE (5-10 ERY/UL)         61         FRACE (5-10 ERY/UL)         MARKED           CM-14         TRACE (5-10 ERY/UL)         61         FRACE (5-10 ERY/UL)         MARKED           CM-15         NEGATIVE         62         SEE SUMMARY REPORT         SEE SU		CM-13	NEGATIVE	9	NEGATIVE	
CM-15  CM-11  POSITIVE (MOD OR 2+1)  CM-12  CM-12  NEGATIVE  CM-13  POSITIVE (50 ERY/UL)  FRACE  CM-14  TRACE (5-10 ERY/UL)  FRACE  CM-15  NEGATIVE  61  NEGATIVE  62  SEE SUMMARY REPORT  SEE SU		CM-14	MALL	62	SEE SUMMARY REPORT	SEE SUMMARY REPORT
CM-11 POSITIVE (50 ERY/UL) 61 POSITIVE (50 ERY/UL) TRACE CM-12 NEGATIVE CM-13 POSITIVE (50 ERY/UL) 61 POSITIVE (50 ERY/UL) TRACE CM-14 TRACE (5-10 ERY/UL) 61 TRACE (5-10 ERY/UL) MARKED CM-15 NEGATIVE 62 SEE SUMMARY REPORT SEE SU CM-15 NEGATIVE 61 NEGATIVE		CM-15	_	62	SEE SUMMARY REPORT	SEE SUMMARY REPORT
CM-12 NEGATIVE  CM-13 POSITIVE (50 ERY/UL) 61 POSITIVE (50 ERY/UL) TRACE  CM-14 TRACE (5-10 ERY/UL) 61 TRACE (5-10 ERY/UL) MARKED  CM-15 NEGATIVE 62 SEE SUMMARY REPORT SEE SU  CM-15 NEGATIVE 61 NEGATIVE	BLOOD/HEWOGLOBIN URINE AMES-CLINITEK	CM-11		61	POSITIVE (SO ERY/UL) Marked Positive (250)	TRACE (5-10 ERY/UL)
CM-13 POSITIVE (SO ERY/UL) 61 POSITIVE (SO ERY/UL) TRACE CM-14 TRACE (S-10 ERY/UL) 61 TRACE (S-10 ERY/UL) MARKED CM-15 NEGATIVE 62 SEE SUMMARY REPORT SEE SU		CM-12	NEGATIVE	61	NEGATIVE	
CM-14 TRACE (5-10 ERY/UL) 61 TRACE (5-10 ERY/UL) MARK CM-15 NEGATIVE 62 SEE SUMMARY REPORT SEE		CM-13	(20	61	POSITIVE (50 ERY/UL) MARKED POSITIVE (250)	TRACE (5-10 ERY/UL)
CM-15 NEGATIVE 62 SEE SUMMARY REPORT SEE		CM-14	_	61	TRACE (5-10 ERY/UL) POSITIVE (50 ERY/UL)	MARKED POSITIVE (250)
NEGATIVE CONTRACTOR OF THE CONTRACTOR OF TAXABLE CONTRACTOR OF THE		CM-15	NEGATIVE	62	SEE SUMMARY REPORT	SEE SUMMARY REPORT
	LEUKOCYTE ESTERASE AMES-GLINITEK	C#-11	NEGATIVE	9	NEGATIVE	

THE THE STATE OF THE CHARGE CONTROLLING CHARGE FOR HOT BE USE AS SOLE CELTERION FOR UNGLING. THE PERTOPHANTE OF ANY INDIVIDUAL CLINICAL LABORATORY



CLINICAL MICROSCOPY

EVALUATION

CAP NUMBER: 38988-01-01-01 KIT# 01

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CONSTITUENT	SPEC	**** YOUR RESULT ***	CODE	GOOD PERFORMANCE	ACCEPTABLE PERFORMANCE	1
LEUKOCYTE ESTERASE	CM-12	@ TRACE	61	SMALL (1+) Moderate (2+)	TRACE LARGE (3+)	
	CM-13	NEGATIVE	61	NEGATIVE		
	CM-14	LARGE (3+)	61	MODERATE (2+) Large (3+)	TRACE Small (1+)	
	CM-15	NEGATIVE	61	NEGATIVE		
NITRITE/URINE AMES-CLINITEK	CM-11	NEGATIVE	61	NEGATIVE		
	CM-12	POSITIVE	19	POSITIVE		
	CM-13	NEGATIVE	61	NEGATIVE		
	CM-14	POSITIVE .	62	SEE SUMMARY REPORT	SEE SUMMARY REPORT	
	CM-15	NEGATIVE	61	NEGATIVE		
URINE HCG TEST NOT PERFORMED	CM-11		10	SEE SUMMARY REPORT	SEE SUMMARY REPORT	
	CM-12		10	SEE SUMMARY REPORT	SEE SUMMARY REPORT	
	CM-13		10	SEE SUMMARY REPORT	SEE SUMMARY REPORT	
	CM-14		10	SEE SUMMARY REPORT	SEE SUMMARY REPORT	
	CM-15		10	SEE SUMMARY REPORT	SEE SUMMARY REPORT	
URINE SEDIMENT IDENT.	CM-17	URIC ACID CRYSTAL	7.1	URIC ACID CRYSTAL		
	CM-18	STARCH GRANULE	7.1	STARCH GRANULE		
	CM-19	ENTEROBIUS VERMICULAR	7.1	ENTEROBIUS VERMICULAR		
CSF & BODY FLUID	CM-20	TEST NOT PERF. IN LAB.	72	PLASMA CELL LYMPH. REACT. (ATYPICL)		
	CM-21	TEST NOT PERF. IN LAB.	7.1	MESOTHELIAL CELL	MONOCYTE/MACROPHAGE	
		● RESULT ACCEPTABLE				

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SURVEY SET: CM - C
CAP NUMBER: 38988-01-01-01 KIT# 01
ATTENTION:
INSTITUTION: PENNINGTON BIOMEDICAL RSCH

KIT MAILED: 9/30/91 CUEST. EVAL: 12/03/91

PENNINGTON BIOMEDICAL RSCH CTR CLINICAL RESEARCH LABORATORY 6400 PERKINS RD. LA 70808 BATON ROUGE

INDIVIDUAL CLINICAL LAPCHATORY

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BE USED AS A SOLE CRITERION FOR JUDGING THE PERFORMANCE OF

HIS INTEL ARRANTORY COMPASSON MAT

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PAGE
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CLINICAL MICROSCOPY

KIT MAILED: 9/30/91 QUEST. EVAL: 12/03/91

EVALUATION SURVEY SET: CM - C
CAP NUMBER: 38988-01-01-01 KIT# 01
ATTENTION:
INSTITUTION: PENNINGTON BIOMEDICAL RSCH CTR

WETHOUS		SPEC. RESULT CODE MEAN	006	VALUATION	STATI S.D.	STICS	HOS	METHODS	OOMPARATIVE STATISTICS MEAN		LA86 SDI
SPECIFIC GRAVITY, URINE Refractometer	CM-22 CM-23 CM-24 CM-25	1.014 1.017 1.018 1.018	00000	1.0130 1.0166 1.0246 1.0130	.0010 .0010 .0010 .0011	2491 2480 2488 2488 2488	0.4.0.1.0.4.0.1.0.4.0.1.0.4.4.0.4.0.4.4.0.4.4.0.4.4.0.4.4.0.4.4.0.4.4.0.4.4.0.4.4.0.4.4.0.4.4.0.4.0.4.4.0.4.4.0.4.4.0.4.4.0.4.4.0.4.4.0.4.4.0.4.4.0.4.4.0.4.4.0.4.0.4.4.0.4.4.0.4.4.0.4.4.0.4.4.0.4.4.0.4.4.0.4.4.0.4.4.0.4.4.0.4.0.4.4.0.4.4.0.4.4.0.4.4.0.4.4.0.4.4.0.4.4.0.4.4.0.4.4.0.4.4.0.4.0.4.4.0.4.4.0.4.4.0.4.4.0.4.4.0.4.4.0.4.4.0.4.4.0.4.4.0.4.4.0.4.0.4.4.0.0.4.0.0.4.0.0.4.0.0.4.0.0.4.0.0.0.4.0	REFRACTOMETER	1.0130 1.0166 1.0246 1.0130 1.0099	. 0010 . 0010 . 0010 . 0010 . 0001	2491 +1 2480 +0 2474 +0 2488 +0 2485 +1
DSMOLALITY-URINE MOSM/KG H20 TEST NOT PERFORMED CM-22 CM-23 CM-25 CM-25 CM-25	CM-23 CM-23 CM-24 CM-25 CM-25		00000					ADVANGED INSTRUMENTS	725.5 837.8 1053.5 725.9 201.1	9.88.10.01 9.98.4.20 7.74	1123 +0. 1130 +0. 1125 +0. 1137 +0.
<u> </u>	CK-22 CK-23 CK-23 CK-24	20 30 30 30 30 30 30 30 30 30 30 30 30 30	<b>.</b>	10.4 839.4 10.9	4.4 6.2 193.3 4.7 35.1						
CONSTITUENT SPECIAL SPEC.	SPEG.		DOY ***	YOUR RESULT	*	CODE		GOOD PERFORMANCE	ACCEPTABLE	BLE PERFORMANCE	MANCE
PK IN URINE AMESHOLINITEK	CM+22		<b>I</b>			19		7.0 7.5 8.0 OR MORE			
ON-23	CM-23		<b>8</b> . 9			19		6.6 6.0			
5	CM-24	7.5	75			5		7.0 7.5 8.0 GR MORE			

THINGTHE THE BETHER OF THE THIRD ARRESTORY CHAPASTON AND BE USED AS A SOLF CRITERION FOR JUGGING THE PERFORMANCE OF ANY INDIVIDUAL CLINICAL LPREATIDRY



CLINICAL MICROSCOPY

KIT# 01

CAP NUMBER: 38988-01-01-01

EVALUATION

CONSTITUENT SPEC. *** YOUR	SPEO.	SPEC. *** YOUR RESULT	3000	GOOD PERFORMANCE	**** YOUR RESULT **** CODE GOOD PERFORMANCE ACCEPTABLE PERFORMANCE
PH IN URINE CM-25 7.5	CM-25	7.5	61	61 7.0	
			MON WOO	6.0 OR MORE	
	CM-26	8.0 OR MORE	19	0.0	
PROTEIN QUAL, URINE AMES-CLINITEK	CM-22	NEGATIVE 61 NEGATIVE	19	NEGATIVE	NEGATIVE 61 NEGATIVE

TRACE 100 MG/DL (2+) 300-500 MG/DL (3+) 1000 MG/DL(4+) OR NORE

TRACE 30 MG/DL (1+) 100 MG/DL (2+) 1000 MG/DL(4+)OR MORE

300-500 MG/DL (3+)

61

300-500 MG/DL (3+)

CM-24

NEBATIVE

61

100 MG/DL (2+)

NEBATIVE

CM-25

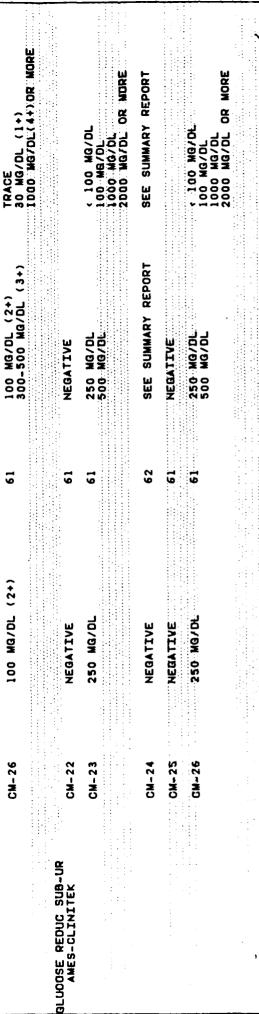
CM-26

30 MG/DL (1+)

9

30 MG/DL (1+)

CM-23





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CLINICAL MICROSCOPY

EVALUATION

CAP NUMBER: 38988-01-01-01 KIT# 01

CONSTITUENT	SPEC	A TOUR REAL TOUR REAL TOURS OF THE STREET	CODE	GOOD PERFORMANCE	ACCEPTABLE PERFORMANCE
KETONES-URINE AMES-CLINITEK	CM-22	NEGATIVE	61 NEGATIVE	TIVE	
	CM-23	NEGATIVE	1 NEGATIVE	TIVE	
	CM-24	MODERATE (2+) 61		MODERATE (2+) Large (3+)	SMALL (1+)
·	CM~25	NEGATIVE	1 NEGATIVE	LIVE	
	CM-26	LARGE (3+)		LARGE (3+)	SWALL (1+) Moderate (2+)
BILIRUBIN, URINE AMES-CLINITEK	CM-22	NEGATIVE	1 NEGATIVE	TIVE	
	CM-23	NEGATIVE 6	61 NEGATIVE	FIVE	
	CM-24	TRACE (SMALL OR 1+) 6	ISOd 19	POSITIVE (MOD OR 2+)	TRACE (SMALL OR 1+) LARGE AMOUNT (3+)
	CM-25	NEGATIVE 61	1 NEGATIVE	TVE	
	CM-26	# TRACE (SWALL OR 1+) 61	1 POSITIVE	TIVE (MOD OR 2+)	TRACE (SMALL OR 1+) LARGE AMOUNT (3+)
BLDDD/HEMOGLOBIN URINE AMES-CLINITEK	CN-22	NEGATIVE 6	61 NEGATIVE	TAVE	
	CM-23	NEGATIVE 61	1 NEGATIVE	IIVE	
	CM-24	TRACE (5-10 ERY/UL) 61		TRACE (5-10 ERY/UL) POSITIVE (50 ERY/UL)	MARKED POSITIVE (250)
	CM+25	NEGATIVE 61	INEGATIVE	ET/E	
	CM-26	POSITIVE (50 ERY/UL) 61		POSITIVE (50 ERY/UL) Marked Positive (250)	TRACE (5-10 ERY/UL)
LEUKOCYTE ESTERASE AMES-OLINITEK	GW-22	NEGAT IVE	1 NEGATIVE	FIVE	
	CM-23	MODERATE (2+) 61		TRACE Small (1+) Noderate (2+)	LARGE (3+)
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THE PERFORMANCE THAT THE RECEITE OF THE INTERIORATION CHAPABISON WIT BE USEN AS A SILE CRITERION FOR HIGGING THE PERFORMANCE OF ANY INDIVIDUAL CLEMICAL CARDANTINEY



CLINICAL MICROSCOPY

EVALUATION

CAP NUMBER: 38988-01-01-01 KIT# 01

CONSTITUENT	SPEC.	ATT YOUR RES	SULT **** CODE	GOOD PERFORMANCE	ACCEPTABLE PERFORMANCE
LEUKOCYTE ESTERASE	CM-24	MODERATE (2+)	0	MODERATE (2+) Large (3+)	TRACE SMALL (1+)
	CM-25	NEGATIVE	61	NEGATIVE	
	CM-26	MODERATE (2+)	61	MODERATE (2+) Large (3+)	TRACE SMALL (1+)
NITRITE/URINE AMES-CLINITEK	CM-22	NEGATIVE		NEGATIVE	
	CM-23	NEGATIVE	62	SEE SUMMARY REPORT	SEE SUMMARY REPORT
:	CM-24	POSITIVE	19	POSITIVE	
	CM-25	NEGATIVE	19	NEGATIVE	
	CM-26	NEGATIVE	61	NEGATIVE	
URINE HCG TEST NOT PERFORMED	CM-22		91	SEE SUMMARY REPORT	SEE SUMMARY REPORT
	CM-23		10	SEE SUMMARY REPORT	SEE SUMMARY REPORT
	CM-24		10	SEE SUMMARY REPORT	SEE SUMMARY REPORT
	C#-25		0,1	SEE SUMMARY REPORT	SEE SUMMARY REPORT
	CM-26		10	SEE SUMMARY REPORT	SEE SUMMARY REPORT
SIMULATED URINE SEDIMT	RBC	1-2	10	SEE SUMMARY REPORT	SEE SUMMARY REPORT
	₩ ₩ ₩		91	SEE SUMMARY REPORT	SEE SUMMARY REPORT
	EPI	NEGATIVE	10	SEE SUMMARY REPORT	SEE SUMMARY REPORT
-	BAC	LESS THAN 10	10	SEE SUMMARY REPORT	SEE SUMMARY REPORT
	YEAST	POSITIVE		SEE SUMMARY REPORT	SEE SUMMARY REPORT
	MUCUS	NEGATIVE	10	SEE SUMMARY REPORT	SEE SUMMARY REPORT
	SPERM	NEGATIVE	01	SEE SUMMARY REPORT	SEE SUMMARY REPORT
	CAST	NEGATIVE	10	SEE SUMMARY REPORT	SEE SUMMARY REPORT
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CLINICAL MICROSCOPY

EVALUATION

CAP NUMBER: 38988-01-01-01 KIT# 01

CONSTITUENT CONSTITUENT METHODS METHODS METHODS	SPEC	YANA YOUR RESULT	000	1	ACCEPTABLE PERFORMANCE
	CAST		10	SEE SUMMARY REPORT	SEE SUMMARY REPORT
CRYST	CRYST	VE	10	SEE SUMMARY REPORT	SEE SUMMARY REPORT
	CRYST		10	SEE SUMMARY REPORT	SEE SUMMARY REPORT
URINE SEDIMENT IDENT.	CM-27	FIBER FECAL CONTAMIN	7.1	FIBER FEGAL CONTAMIN	
CH-28	CM-28	* NON-HEWOGLOBIN PIGMENT	12	CELLULAR, RTE CAST	CELLULAR, NEUT. CAST GRANULAR DAST
CSF & BODY FLUID	CM-29	TEST NOT PERF. IN LAB.	7.1	ERYTHROCYTE LADEN MACR	MONOCYTE/MACROPHAGE
	CM.30 TEST NOT PE	CM.30 TEST NOT PERF. IN LAB. 71	12	HEMATIN CRYSTALS	NEUTROPHIL W/CRYSTAL CALCIUM BILIRUB, CRYST ORYSTALS (NOS)
	CM-31	TEST NOT PERF. IN LAB.	7.1	HEMOSIDERIN LADEN MACR	
* NOT ACCEPT * NOT ACCEPT * RESULT EXO * RESULT ACC		* NOT ACCEPTABLE # RESULT EXCEEDS FIXED CRITERIA # RESULT ACCEPTABLE	CRITERIA		

YOUR NEXT SURVEY KIT, SET CM-D, IS SCHEDULED TO BE SHIPPED JANUARY 6, 1992.

PENNINGTON BIOMEDICAL RSCH CTR CLINICAL RESEARCH LABORATORY 6400 PERKINS RD. BATON ROUGE ... LA 70508

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CLINICAL MICROSCOPY

SURVEY SET: CM - D
CAP NUMBER: 38988-01-01-01 KIT# 01
ATTENTION:
INSTITUTION: PENNINGTON BIOMEDICAL RSCH CTR

EVALUATION

College of American Pathologists

PAGE 02

1/06/92 3/07/92 KIT MAILED: QUEST. EVAL:

CONSTITUENT	Sign	YOUR	****	EVALUATION	STATISTI			1 + + + + + + + + + + + + + + + + + + +	COMPARATI	VE STATISTICS	1 •	D + + 1	1 * OS
SPECIFIC GRAVITY,			t .			1 1 1 1 1	1 		; ; ; ; ;	1 1 6 5 2 1		6 t 5 5 1	!
OSMOLALITY-URINE TEST NOT PERFORMED	MOSM/KG H20 CM-33 CM-34 CM-35 CM-35 CM-35	٥	55555			-	ADVANC	ADVANCED INSTRUMENTS		1389.6 464.9 722.4 247.3 1082.3	7. 0. 0. 4. c. 0. c. e.	មាខាខាខា សមាខាខាខា សមាខាខាខា	00000
PROTEIN QUANT. URINE NOT GIVEN	MG/DL CM-33 CM-34 CM-35 CM-35 CM-35	85005	55555				NO CO	NO COMPARATIVE	METHOD				
SIMULATED BODY FLUID TEST NOT PERFORMED	UL CM-43		ō				NO CON	COMPARATIVE	METHOD				
CONSTITUENT	SPEC.		YOUR	RESULT ***	CODE	GOOD	PERFORMAN		ACCEPTABLE		PERFORMANCE		1 1
PH IN URINE AMES-CLINITEK	CM-33	ν.	10		6	ည က ဝ <b>က</b> ဝ							

CLINICAL MICROSCOPY

SURVEY SET: CM - D CAP NUMBER: 38988-01-01-01 KIT# 01

EVALUATION

4 8.0 DR MORE 61 5 7.5 6 7.5 6 7.5 7 5.0 100 MG/DL (2+) 61 14 100 MG/DL (2+) 61 15 NEGATIVE 61 16 NEGATIVE 61 17 100 MG/DL (2+) 61 18 500 MG/DL (2+) 61 19 500 MG/DL (2+) 61	SPEC. **** YOUR RESULT *** CODE	E GOOD PERFORMANCE	ACCEPTABLE PERFORMANCE
CM-35 7.5 61  CM-36 7.5 61  CM-37 5.0 61  CM-33 100 MG/DL (2+) 61  CM-35 NEGATIVE 61  CM-36 NEGATIVE 61  CM-37 100 MG/DL (2+) 61  CM-37 100 MG/DL (2+) 61	4 8.0 OR MORE		
CM-36 7.5 61  CM-37 5.0 61  CM-33 100 MG/DL (2+) 61  CM-36 NEGATIVE 61  CM-36 NEGATIVE 61  CM-37 100 MG/DL (2+) 61  CM-37 500 MG/DL (2+) 61  CM-37 500 MG/DL (2+) 61	7.5	7.0 7.5 8.0 OR MORE	
CM-37 5.0 61  CM-33 100 MG/DL (2+) 61  CM-34 100 MG/DL (2+) 61  CM-35 NEGATIVE 61  CM-36 NEGATIVE 61  CM-37 100 MG/DL (2+) 61  CM-37 500 MG/DL (2+) 61  CM-33 500 MG/DL (2+) 61	7.5	7.0 7.5 8.0 OR MORE	
CM-33 100 MG/DL (2+) 61 CM-34 100 MG/DL (2+) 61 CM-35 NEGATIVE 61 CM-36 NEGATIVE 61 CM-37 100 MG/DL (2+) 61 CM-33 500 MG/DL (2+) 61 CM-33 500 MG/DL 62	S.O		
CM-34 100 MG/DL (2+) 61 CM-35 NEGATIVE 61 CM-36 NEGATIVE 61 CM-37 100 MG/DL (2+) 61 CM-33 500 MG/DL (2+) 61 CM-34 500 MG/DL 62	100 MG/DL (2+)	100 MG/DL (2+) 300-500 MG/DL (3+)	TRACE 30 MG/DL (1+) 1000 MG/DL(4+)0R MDRE
CM-35 NEGATIVE 61 CM-36 NEGATIVE 61 CM-37 100 MG/DL (2+) 61 CM-33 500 MG/DL 62 CM-34 500 MG/DL 61	100 MG/DL (2+)	100 MG/DL (2+) 300-500 MG/DL (3+)	TRACE 30 MG/DL (1+) 1000 MG/DL(4+)DR MDRE
CM-36 NEGATIVE 61 CM-37 100 MG/DL (2+) 61 CM-33 500 MG/DL 62 CM-34 500 MG/DL 61	NEGATIVE	NEGATIVE	
CM-37 100 MG/DL (2+) 61 CM-33 500 MG/DL 62 CM-34 500 MG/DL 61	NEGATIVE	NEGATIVE	
CM-33 500 MG/DL 62 CM-34 500 MG/DL 61	100 MG/DL (2+)	100 MG/DL (2+) 300-500 MG/DL (3+)	TRACE 30 MG/DL (1+) 1000 MG/DL(4+)OR MORE
500 MG/DL 61	500 MG/DL	SEE SUMMARY REPORT	SEE SUMMARY REPORT
	500 MG/DL	1000 MG/DL	< 100 MG/DL 100 MG/DL 250 MG/DL 2000 MG/DL DR MDRE
CM-35 NEGATIVE 61 NEGATIVE	NEGATIVE	I NEGATIVE	

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SURVEY SET: CM - D CAP NUMBER: 38988-01-01-01 KIT# 01

EVALUATION

S	SPEC.	*** YOUR RESULT ***	CODE	GOOD PERFORMANC	ACCEPTABLE PERFORMANCE
GLUCOSE REDUC SUB-UR	CM-36	NEGATIVE	61	NEGATIVE	•
	CM-37	100 MG/DL	6	< 100 MG/DL 100 MG/DL	250 MG/DL 500 MG/DL 1000 MG/DL 2000 MG/DL OR MORE
KETONES-URINE AMES-CLINITEK	CM-33	NEGATIVE	61	NEGATIVE	
	CM-34	NEGATIVE	61	NEGATIVE	
	CM-35	NEGATIVE	61	NEGATIVE	
	CM-36	LARGE (3+)	ē T	LARGE (3+)	SMALL (1+) MODERATE (2+)
	CM-37	NEGATIVE	61	NEGATIVE	
BILIRUBIN, URINE AMES-CLINITEK	CM-33	NEGATIVE	61	NEGATIVE	
	CM-34	POSITIVE (MOD OR 2+)	-	POSITIVE (MOD OR 2+) LARGE AMOUNT (3+)	TRACE (SMALL OR 1+)
	CM-35	NEGATIVE	19	NEGATIVE	
	CM~36	NEGATIVE	6	NEGATIVE	
	CM-37	NEGATIVE	-	NEGATIVE	
BLOOD/HEMDGLOBIN URINE AMES-CLINITEK	CM-33	TRACE (5-10 ERY/UL)	19	TRACE (5-10 ERY/UL) POSITIVE (50 ERY/UL)	MARKED POSITIVE (250)
	CM-34	POSITIVE (50 ERY/UL)	61	POSITIVE (50 ERY/UL) MARKED POSITIVE (250)	TRACE (5-10 ERY/UL)
	CM-35	NEGATIVE	61	NEGATIVE	
	CM-36	NEGATIVE	6.1	NEGATIVE	

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EVALUATION CLINICAL MICROSCOPY

SURVEY SET: CM - D CAP NUMBER: 38988-01-01-01 KIT# 01

	SPEC.	**** YOUR RESULT ****	CODE	1	ACCEPTABLE PERFORMANCE
BLOOD/HEMOGLOBIN URINE	CM-37		6 1	CE (5-10 ERY/UL) ITIVE (50 ERY/UL)	MARKED POSITIVE (250)
LEUKOCYTE ESTERASE AMES-CLINITEK	CM-33	NEGATIVE	<b>6</b>	NEGATIVE	
	CM-34	MODERATE (2+)	61	MODERATE (2+) 5	TRACE SMALL (1+) LARGE (3+)
	CM-35	NEGATIVE	61	NEGATIVE	
	9€WO	NEGATIVE	61	NEGATIVE	
	CM-37	NEGATIVE	61	NEGATIVE	
NITRITE/URINE AMES-CLINITEK	CM-33	POSITIVE	61	POSITIVE	
	CM-34	NEGATIVE	61	NEGATIVE	
	CM-35	NEGATIVE	61	NEGATIVE	
	2M-36	NEGATIVE	61	NEGATIVE	
	CM-37	* NEGATIVE	61	POSITIVE	
URINE HCG TEST NOT PERFORMED	CM-33		ō	SEE SUMMARY REPORT	SEE SUMMARY REPORT
	CM-34		ō	SEE SUMMARY REPORT	SEE SUMMARY REPORT
	CM-35		5	SEE SUMMARY REPORT	SEE SUMMARY REPORT
	2W-36		õ	SEE SUMMARY REPORT	SEE SUMMARY REPORT
	CM-37		õ	SEE SUMMARY REPORT	SEE SUMMARY REPORT
SIMULATED URINE SEDIMT	RBC	1-2	9	SEE SUMMARY REPORT	SEE SUMMARY REPORT
	<b>₹B</b> C	NEGATIVE	õ	SEE SUMMARY REPORT	SEE SUMMARY REPORT
,	EP I	NEGATIVE	0	SEE SUMMARY REPORT	SEE SUMMARY REPORT

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EVALUATION

CONSTITUENT	SPEC.	**** YOUR RESULT ***	Cabe	CODE GOOD PERFORMANCE	ACCEPTABLE PERFORMANCE
SIMULATED URINE SEDIMT	BAC	LESS THAN 10	5	SEE SUMMARY REPORT	SEE SUMMARY REPORT
	YEAST	NEGATIVE	õ	SEE SUMMARY REPORT	SEE SUMMARY REPORT
	MUCUS	NEGATIVE	ō	SEE SUMMARY REPORT	SEE SUMMARY REPORT
•	SPERM	NEGATIVE	9	SEE SUMMARY REPORT	SEE SUMMARY REPORT
	CAST	NEGATIVE	o	SEE SUMMARY REPORT	SEE SUMMARY REPORT
	CAST		ō	SEE SUMMARY REPORT	SEE SUMMARY REPORT
	CRYST	NEGATIVE	ō	SEE SUMMARY REPORT	SEE SUMMARY REPORT
	CRYST		ō	SEE SUMMARY REPORT	SEE SUMMARY REPORT
URINE SEDIMENT IDENT.	CM-38	* URIC ACID CRYSTAL	7.1	CHOLESTEROL CRYSTALS	
	CM-39	ERYTHROCYTES	7.	ERYTHROCYTES	
CSF & BODY FLUID	CM-40	TEST NOT PERF. IN LAB.	7.1	LYMPHOCYTE	LYMPH, REACT, (ATYPICL)
	CM-41	TEST NOT PERF. IN LAB.	7.1	EOSINOPHIL	
	CM-42	TEST NOT PERF. IN LAB.	7.1	NEUTROPHIL SEGMENTED	
SIMULATED BODY FLUID	CM-43		ō	SEE SUMMARY REPORT	SEE SUMMARY REPORT
		* NOT ACCEPTABLE			

\* NOT ACCEPTABLE

\* RESULT EXCEEDS FIXED CRITERIA

1 ) ) CLINICAL MICROSCOPY

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SURVEY SET: CM - A
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CONSTITUENT	SPEC.	YOUR	CODE	EVALUATION	STATI S.D.	STICS	SDI	######################################	ARATIVE STATISTICS MEAN S.	LABS	SDI
SPECIFIC GRAVITY, URINE AMES CLINITEK 200	CM-02 CM-02 CM-03	1.030 1.035 1.036 1.015	<u> </u>	1.0291 1.0214 1.0285 1.0151	0026 0031 0024 0019	1528 1540 1536 1555 1552	0 + + + 0 + 0 + 0 + 0 + 0 + 0 + 0 + 0 +	REFRACTOMETER			
OSMOLALITY-URINE MOSN TEST NOT PERFORMED	MOSM/KG H20 CM-01 CM-02 CM-03 CM-04 CM-04		55555					ADVANCED INSTRUMENTS	TS 1081.7 13.6 845.9 8.6 1089.9 13.0 289.0 5.0 143.3 3.6	1093 1084 1087 1112	00000
PROTEIN QUANT, URINE MG/DL Test not performed	DL CM-01 CM-02 CM-03 CM-04 CM-05		55555					ND COMPARATIVE METHOD	QQH	•	
CONSTITUENT	SPEC.		* YOUR	RESULT ***	000	DE	900	FORMANCE	ACCEPTABLE PERFORMANCE		: :
PH IN URINE AMES-CLINITEK	CM-01	8.			ω	9	٠.	9	6.0		
	CM-02	<b>8</b> 0	OR MORE	3 2	φ	8	0.08	MORE 7	7.0		
											<u> </u>

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CONSTITUENT METHODS	SPEC.	**** YOUR RESULT ****	CODE	GOOD PERFORMANCE	ACCEPTABLE PERFORMANCE
	CM-03	5.5	19	O 10 O	
	CM-04	B.O OR MORE	61	B.O OR MORE	7.0
	CM-05	8.0 OR MORE	6	8.0 OR MORE	7.0
PROJEIN QUAL, URINE AMES-CLINITEK	CM-01	100 MG/DL (2+)	6	100 MG/DL (2+) 300-500 MG/DL (3+)	TRACE 30 MG/DL (1+) 1000 MG/DL(4+)DR MORE
	CM-02	NEGATIVE	61	NEGATIVE	
	CM-03	300-500 MG/DL (3+)	61	300-500 MG/DL (3+)	TRACE 30 MG/DL (1+) 100 MG/DL (2+) 1000 MG/DL(4+)0R MDRE
	CM-04	100 MG/DL (2+)	19	100 MG/DL (2+) 300-500 MG/DL (3+)	TRACE 30 MG/DL (1+) 1000 MG/DL(4+)0R M0RE
	CM-05	30 MG/DL (1+)	19	30 MG/DL (1+) 100 MG/DL (2+)	TRACE 300-500 MG/DL (3+) 1000 MG/DL(4+)0R MORE
GLUCOSE REDUC SUB-UR AMES-CLINITEK	CM-01	NEGATIVE	61	NEGATIVE	
	CM-02	250 MG/DL	19	250 MG/DL 500 MG/DL	< 100 MG/DL 100 MG/DL 1000 MG/DL 2000 MG/DL OR MORE

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CONSTITUENT METHODS	SPEC.	**** YOUR RESULT ***	CODE	GOOD PERFORMANCE	ACCEPTABLE PERFORMANCE
	CM-03	NEGATIVE	61	NEGATIVE	
	CM-04	500 MG/BL	-	500 MG/DL 1000 MG/DL	< 100 MG/DL 100 MG/DL 250 MG/DL 2000 MG/DL DR MDRE
	CM-05	100 MG/DL	19	< 100 MG/DL 100 MG/DL	250 MG/DL 500 MG/DL 1000 MG/DL 2000 MG/DL OR MORE
KETONES-URINE AMES-CLINITEK	CM-01	MODERATE (2+)	61	SMALL (1+) Moderate (2+)	LARGE (3+)
	CM-02	NEGATIVE	61	NEGATIVE	
	CM-03	LARGE (3+)	6	LARGE (3+)	SMALL (1+) Moderate (2+)
	CM-04	NEGATIVE	61	NEGATIVE	
	CM-05	NEGATIVE	61	NEGATIVE	,
BILIRUBIN, URINE AMES-CLINITEK	CM-01	NEGATIVE	61	NEGATIVE	
	CM-02	NEGATIVE	61	NEGATIVE	
	CM-03	NEGATIVE	19	NEGATIVE	
	CM-04	NEGATIVE	61	NEGATIVE	
	CM-05	LARGE AMDUNT (3+)	61	POSITIVE (MOD OR 2+) LARGE AMOUNT (3+)	TRACE (SMALL OR 1+)
BLOOD/HEMOGLOBIN URINE AMES-CLINITEK	CM-01	• TRACE (5-10 ERY/UL)	-6	POSITIVE (50 ERY/UL) MARKED POSITIVE (250)	TRACE (5-10 ERY/UL)
	CM-02	NEGATIVE	61	NEGATIVE	

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METHODS	SPEC.	**** YOUR RESULT ***	CODE	GOOD PERFORMANCE	ACCEPTABLE PERFORMANCE
OBIN URINE	! ! ,		! ! ! !		1
	E0- <b>W</b> -	POSITIVE (50 ERY/UL)	61	POSITIVE (50 ERY/UL) MARKED POSITIVE (250)	TRACE (5-10 ERY/UL)
	CM-04	NEGATIVE	61	NEGATIVE	
	CM-05	MARKED POSITIVE (250)	61	POSITIVE (50 ERY/UL) MARKED POSITIVE (250)	TRACE (5-10 ERY/UL)
LEUKOCYTE ESTERASE AMES-CLINITEK	CM-01	NEGATIVE	<u>6</u>	NEGATIVE	
	CM-02	LARGE (3+)	6	MODERATE (2+)	TRACE
				LARGE (3+)	SMALL (1+)
	CM-03	NEGATIVE	61	NEGATIVE	
	CM-04	MODERATE (2+)	61	MODERATE (2+)	TRACE SMALL (1+) LARGE (3+)
	CM-05	NEGATIVE	61	NEGATIVE	
NITRITE/URINE AMES-CLINITEK	CM-01	POSITIVE	61	POSITIVE	
	CM-02	NEGATIVE	64	NEGATIVE	•
	CM-03	NEGATIVE	61	NEGATIVE	
	CM-04	POSITIVE	61	POSITIVE	
	CM-05	NEGATIVE	61	NEGATIVE	
URINE HCG TEST NOT PERFORMED	CM-01		5	SEE SUMMARY REPORT	SEE SUMMARY REPORT
	CM-02		ō	SEE SUMMARY REPORT	SEE SUMMARY REPORT
	CM-03		õ	SEE SUMMARY REPORT	SEE SUMMARY REPORT
	CM-04		0	SEE SUMMARY REPORT	SEE SUMMARY REPORT

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CONSTITUENT METHODS	SPEC.	**** YOUR RESULT ****	lı w	GOOD PERFO	ACCEPTABLE PERFORMANCE
	CM-05		62	SEE SUMMARY REPORT	SEE SUMMARY REPORT
SIMULATED URINE SEDIMT	RBC	NEGATIVE	ō	SEE SUMMARY REPORT	SEE SUMMARY REPORT
	WBC	1-2	ç	SEE SUMMARY REPORT	SEE SUMMARY REPORT
	EPI	1-2	õ	SEE SUMMARY REPORT	SEE SUMMARY REPORT
	BAC	10-50	ō	SEE SUMMARY REPORT	SEE SUMMARY REPORT
	YEAST	NEGATIVE	5	SEE SUMMARY REPORT	SEE SUMMARY REPORT
	MUCUS	NEGATIVE	ō	SEE SUMMARY REPORT	SEE SUMMARY REPORT
	SPERM	NEGATIVE	9	SEE SUMMARY REPORT	SEE SUMMARY REPORT
	CAST	NEGATIVE	õ	SEE SUMMARY REPORT	SEE SUMMARY REPORT
•	CAST		5	SEE SUMMARY REPORT	SEE SUMMARY REPORT
	CRYST	NEGATIVE	0	SEE SUMMARY REPORT	SEE SUMMARY REPORT
	CRYST		ó	SEE SUMMARY REPORT	SEE SUMMARY REPORT
URINE SEDIMENT IDENT.	90-WO	FAT GLOBULES	72	SEE SUMMARY REPORT	SEE SUMMARY REPORT
	CM-07	CYSTINE CRYSTALS	1.1	CYSTINE CRYSTALS	
CSF & BODY FLUID	CM-08	TEST NOT PERF. IN LAB.	7.1	LYMPHOCYTE	LYMPH. REACT.(ATYPICL) PLASMA CELL
	CM-09	TEST NOT PERF. IN LAB.	7.1	ERYTHROCYTE, MATURE	
	CM-10	TEST NOT PERF. IN LAB.	72	SEE SUMMARY REPORT	SEE SUMMARY REPORT

P RESULT ACCEPTABLE

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SUMMARY OF YOUR PERFORMANCE OVER THE LAST THREE QUARTERS FOR ANALYTES REGULATED UNDER THE 03-14-90 UNIFORM PT GUIDELINES OF CLIA'67	CURRENT QUARTER CUMULATIVE PERFORMANCE INTERPRETATION INTERPRETATION NOT PERFORMED NOT APPLICABLE	NOT PERFORMED
14-90 U	CORES TER C 1 TNP TNP TNP TNP TNP	:
HE 03-	ERFORMANCE SCORES BY YEAR-QUARTER 91-3 91-4 92-1 1NP TNP TNP TNP TNP	:
UNDER T	PERFORMANCE SCORES BY YEAR-QUARTER 91-3 91-4 92-1 TNP TNP TNP TNP	1
TES REGULATED (	SUMMARY OF YOUR RESPONSES	1
ANALY	SUR YOUR TOTAL OOOOOO	: 0
TERS FOR	TOTAL SAMPLES 5 5 10	: 08
QUAR	1 00000	;
THE LAST THREE	TEST CAP # CAP	SUMMARY TOTALS FOR ENDOCRINDLOGY
MANCE OVER		TOTALS FOR
SUMMARY OF YOUR PERFORMANCE OVER THE LAST THREE	REGULATED ANALYTE CORTISOL HCG - OUAL T3 UPTAKE TSH THYROXINE	SUMMARY

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ELINES OF CLIA	CUMULATIVE PERFORMANCE INTERPRETATION SUCCESSFUL SUCCESSFUL SUCCESSFUL SUCCESSFUL SUCCESSFUL SUCCESSFUL SUCCESSFUL SUCCESSFUL
OUARTERS FOR ANALYTES REGULATED UNDER THE 03-14-90 UNIFORM PT GUIDELINES OF CLIA'67	CURRENT QUARTER PERFORMANCE INTERPRETATION SATISFACTORY
THE 03-14-90	PERFORMANCE SCORES BY YEAR-QUARTER 91-3 91-4 92-1 100 100 100 100 100 100 100
UNDER	PERFOR
S REGULATED	SUMMARY OF YOUR RESPONSES TOTAL ACCEPTABLE 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
ANALYTE	SUM YOUR 101AL 5 5 5 5 5 5 5
TERS FOR	SAMPLES SAMPLES 5 5 5 5 5 5 5 5
THE LAST THREE	
NCE OVER	TEST EVENT EVENT CM-92A CM-92A CM-92A CM-92A CM-92A CM-92A
SUMMARY OF YOUR PERFORMANCE OVER THE LAST THREE	TED ANALYTE IN SIN SUMMARY TO
SUMMARY	REGULATED PH BILIRUBIN GLUCOSE GLUCOSE KETONES PROTEIN

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YOUR NEXT SURVEY KIT, SET CM-B, IS SCHEDULED TO BE SHIPPED JULY 6, 1992.

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